THE BRICKBUILDER

VOLUME XVIII OCTOBER 1909 NUMBER 10

PUBLISHED MONTHLY BY ROGERS & MANSON

85 Water Street - - - Boston, Massachusetts

Entered at the Boston, Mass., Post Office as Second-Class Mail Matter, March 12, 1892.

Copyright, 1909, by ROGERS & MANSON

Subscription price, mailed flat to subscribers in the United States, Insular Possessions and Cuba . . . . . $5.00 per year
Single numbers . . . . . 50 cents
Subscription price, mailed flat to subscribers in Canada . . . . . $5.50 per year
To Foreign Countries in the Postal Union . . . . . $6.00 per year

SUBSCRIPTIONS PAYABLE IN ADVANCE

For sale by all news dealers in the United States and Canada. Trade supplied by the American News Company and its branches.

ADVERTISING

Advertisers are classified and arranged in the following order:

	PAGE		PAGE
Agencies — Clay Products	II	Brick Enameled	III and IV
Architectural Faience	II	Brick Waterproofing	IV
" Terra Cotta	II and III	Fireproofing	IV
Brick	III	Roofing Tile	IV

Advertisements will be printed on cover pages only.

CONTENTS

PLATE ILLUSTRATIONS

FROM WORK BY

COPE & STEWARDSON; CRAM, GOODHUE & FERGUSON; CRAM, GOODHUE & FERGUSON AND GEORGE H. WILLIAMSON ASSOCIATED; ALBERT RANDOLPH ROSS; WILLIAM WARREN SABIN; PRIZE DESIGNS SUBMITTED IN THE COMPETITION FOR A BRICK HOUSE.

LETTERPRESS

PAGE

CHURCH OF ST. URBANO, ROME ..... Frontispiece
THE GIRARD ESTATE'S OPERATION OF EIGHT HUNDRED DWELLINGS IN PHILADELPHIA, JAMES H. WINDRIM, ARCHITECT 199
WARMING AND VENTILATING WITH SPECIAL REFERENCE TO HOSPITAL BUILDINGS — VI. *D. D. Kimball* 202
TERRA COTTA: ITS CHARACTER AND CONSTRUCTION — I. ..... *Charles U. Thrall* 204
COMPETITION FOR A BRICK HOUSE — REPORT OF THE JURY OF AWARD 208
COMPETITION FOR A BRICK HOUSE — MENTION DESIGNS SUBMITTED IN THE COMPETITION 209
HOUSE AT WASHINGTON, D. C., MARSH & PETER, ARCHITECTS 212
STANDARD ARCHITECTURAL BOOKS — VII. 213
EDITORIAL COMMENT AND MISCELLANY 215
PROGRAM FOR ANNUAL TERRA COTTA COMPETITION 220

CHURCH OF ST. URBANO, ROME.

GIOVANNI BATTISTA PIRANESI, DEL.

The church of St. Urbano, formerly a Roman temple, is situated outside the gates of Rome, near the Appian Way. This building, as proved by the stamps on the bricks, belongs to the Antonine period of the Roman Empire (Second century, A.D.). It had a projecting porch with four Corinthian columns and capitals. It was transformed into a church in early Christian times. The columns were walled up in 1634 by Pope Urban VIII., as shown in Piranesis' engraving. The interior is entirely of brick and almost square. It contains frescoes of interest on account of their early date (1011) but much restored in later times.

THE BRICKBVILDER

VOL. 18 NO. 10 DEVOTED TO THE INTERESTS OF ARCHITECTVRE IN MATERIALS OF CLAY OCTOBER 1909

The Girard Estate's Operation of Eight Hundred Dwellings in Philadelphia—James H. Windrim, Architect.

BY THE will of Stephen Girard, large tracts of land within and without the city of Philadelphia came under the care of the Board of Directors of City Trusts. This body, organized in 1869, is composed of twelve citizens of standing and integrity, the mayor and presidents of Select and Common Councils exofficio. The steady income from the property of the famous "mariner and merchant" it is the task of these men to invest in the safest and surest channels. As the lands increase in value with the extension of population it is their care to so improve them as to reap the surest, if not the largest, profit.

Some of this land is situated in the southern part of Philadelphia, removed by three miles from the center of the city, and where much of the ground has been produced by filling in, where all is flat and where landlords can expect to obtain rentals of very moderate figures only. It was determined to improve this land by the erection of eight hundred small dwellings. At the present writing two hundred have been completed.

Now the Girard Estate cannot sell its property. And when it improves it, it must do so, not with a view merely to the morrow, but to long periods of time. It realizes that substantial construction pays in the long run. The result of this view is a revelation in operative building presented by the two hundred houses at 18th and Porter Streets. They have been built with a view of minimizing maintenance cost.

There are eight different types of houses. Two houses of each type are located beside two houses of another, and thus all the types appear in sequence and affording a relief from the monotony of thousands of street vistas in Philadelphia where houses have been built by the block. Midway between 17th and 18th streets, and parallel thereto, a new street has been opened and dedicated; and nowhere better than here can the different styles of houses be seen, for the new planting here does not interrupt the view.

The houses range in cost from $2,200 to $3,200 each, including all fixtures, painting, and tree-planting. All

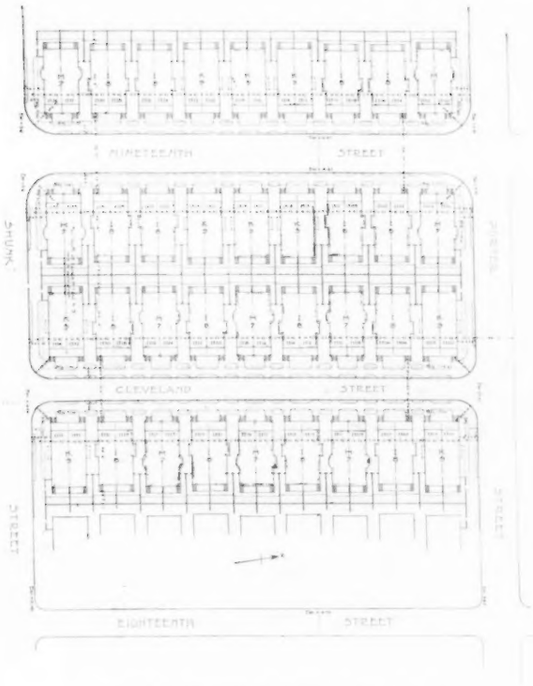
GIRARD ESTATE HOUSES. A CONTRAST.

The three-story house in solid row, common to Philadelphia, and the two-story house, semi-detached, unusual in built-up portions of the city. All are in the Girard Estate Operations.

A VIEW DOWN THE NEW STREET.

THE VARIOUS TYPES OF HOUSES; TWO-STORY AND SEMI-DETACHED.

GIRARD ESTATE HOUSES.



GIRARD ESTATE HOUSES. PLOT PLAN.

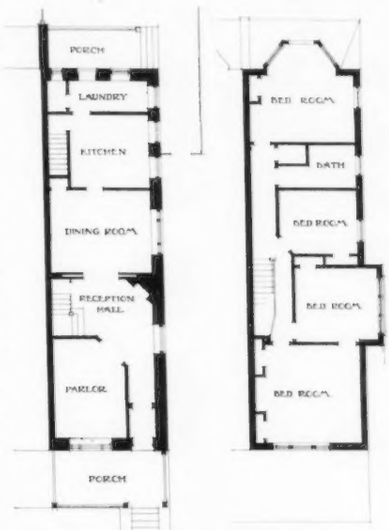
walls and cornices, where the houses occur in solid rows, as on 17th street, are of inflammable material. Tapestry and Roman bricks, rubble stone, and rough-cast are the chief materials.

Probably the most important feature of the enterprise is the power plant, situated a half mile distant, and supplying the houses with heat, electricity, and hot water, the cost of this being included in the rent. The heating method is hot water, the circulation of which is accelerated by means of a pump. The only ranges the houses contain are gas ranges, and each tenant pays the local company independently for the gas he needs. This is the only expenditure he has to consider in addition to the rent, unless it be the possibility of exceeding the amount of electricity allotted to his use for the current, and this commodity only, is metered. The rentals are based on the cost of construction and on the contribution which the power plant must make to the comfort of each tenant. The skilful engineers of the estate begin the latter computation, as they figure in advance upon many other building enterprises, with the cost of evaporating a quart of water.

SCHEDULE OF RENTALS.

	Class A	Class B	Class C	Class D	Class E	Class F	Class G	Class H
January . .	$45.50	$44.50	$43.50	$42.50	$41.50	$39.50	$37.50	$35.50
February .	43.50	42.50	41.50	40.50	39.50	37.50	35.50	33.50
March . . .	41.00	40.00	39.00	38.00	37.00	35.50	33.50	31.50
April	38.00	37.00	36.00	35.00	34.00	32.50	30.50	29.50
May	34.00	33.00	32.00	31.00	30.00	29.00	27.00	27.00
June	34.00	33.00	32.00	31.00	30.00	29.00	27.00	27.00
July	34.00	33.00	32.00	31.00	30.00	29.00	27.00	27.00
August . . .	34.00	33.00	32.00	31.00	30.00	29.00	27.00	27.00
September .	35.00	34.00	33.00	32.00	31.00	29.50	27.50	27.50
October . .	38.00	37.00	36.00	35.00	34.00	32.50	30.50	29.50
November .	41.50	40.50	39.50	38.50	37.50	35.50	33.50	31.50
December .	43.50	42.50	41.50	40.50	39.50	37.50	35.50	33.50
Total	$462.00	$450.00	$438.00	$426.00	$414.00	$396.00	$372.00	$360.00
Average per month . .	$38.50	$37.50	$36.50	$35.50	$34.50	$33.00	$31.00	$30.00

Although the houses have scarcely been finished, many are already rented; and a view of the neighborhood affords great satisfaction to those who see in wise planning and building the foundation of wholesome and happy living, as well as a chance to beautify the residential sections of the city.



DESIGN 'K' FIRST AND SECOND FLOOR PLAN

DESIGN 'H' FIRST AND SECOND FLOOR PLANS — DESIGN 'I' FIRST AND SECOND FLOOR PLANS

GIRARD ESTATE HOUSES. TYPICAL PLANS.

Warming and Ventilating with Special Reference to Hospital Buildings—VI.

BY D. D. KIMBALL.

THAT the air contains solid matter may be plainly observed by noticing a shaft of sunlight in a partially darkened room. Much of it is practically harmless to the average person, being dust from the floor or furniture or dust brought in from the outside. With some of it will be found bacteria, in part harmless, even beneficial, but still other bacteria may exist in this dust which are of a harmful nature.

This may be accomplished by filtering the air, which may be done by either the "dry" or "wet" method. In the dry system the filtering cloth used must be carefully selected and the velocity of the air must never exceed 20 feet per minute through the cloth, a less velocity being preferable. The filtering cloth may be arranged on flat frames or in the form of bags, these usually being 8 inches to 12 inches in diameter, and of the necessary length up to approximately ten times the diameter to secure the necessary area of cloth. These bags are suspended from metal thimbles attached to a sheet metal diaphragm, the method of connecting being such as to make the bags easily removable. There should not be less than 3 inches between the surface of the bags. The air passes through the bags from the top.

In the wet method the air is passed through a spray chamber, always first being warmed to above the freezing point in cold weather, the spray chamber containing a series of nozzles designed to thoroughly fill the chamber with a fine water spray so that the air is thoroughly saturated and the dust is washed out. The air is then passed through a series of metal baffle plates at a velocity of about 500 feet per minute. In this eliminator practically all of the suspended moisture is removed from the air, the water draining to the settling chamber at the bottom of the air washer, from which it is recirculated through the washer by means of a small rotary pump.

The effect on the air passing through the spray chamber is to increase its moisture or humidity to such an extent that the air becomes practically saturated. In cold weather the reheating of the air which necessarily follows this passage through the washer, reduces the relative humidity of the air. During such weather it is possible to largely control the relative humidity of the air by controlling the temperature of the air or water or both in the spray chamber, but in warm weather the use of the air washer may become objectionable because of the increased relative humidity of the air caused thereby. On warm days the air washer may be used to cool the air slightly if an increased relative humidity is not objectionable.

Both methods of air filtration are largely confined to use in connection with a fan system of ventilation, although the cloth system may be used in a gravity ventilating system if the air velocity through the cloth is limited to 4 feet per minute.

Air cooling is sometimes essential in a hospital building. It is but little practised because of the cost of installation of suitable apparatus and the cost of operating the system.

A limited amount of air cooling may be done by forcing the air over ice in the form of cakes supported on properly spaced racks. The air will melt the ice and will also warm the resulting water. Each pound of ice in melting absorbs 142 heat units and if the water is warmed to 62° 30 heat units additional are absorbed, thus giving 172 heat units per pound of ice. Thus if 30,000 cubic feet of air per hour at 90° temperature is to be cooled to 80° temperature, the amount of ice required may be approximately found by multiplying the 30,000 cubic feet by 10°, then dividing by 55, and again dividing by 172 heat units, as above, and the result will be approximately 32 pounds of ice. The figure 55 is not exactly correct, but is here used to avoid confusion, as its significance has been previously explained. A liberal amount should be added for gains in the temperature of the air in transmitting it through flues, etc.

In undertaking to cool a room or a building the heat gains become a serious factor. The amount of such heat gains is determined in the same manner as the heat losses in designing a heating system. If a building to be built is to be cooled during warm weather it should be constructed with this in mind, with an aim especially to the reduction of heat transmission through the walls, and also the reduction of the air leakage about the windows, doors, etc., the latter especially having a serious effect on the success of the air cooling installation.

For a large problem only a mechanical refrigerating system is to be considered. In this system the brine at about 10° Fah. is circulated through the coils, over which the air is forced or drawn by a fan. The cooling of the air increases its relative humidity just as warming the air decreases it, with the result that it becomes uncomfortable unless some of the moisture is removed, to do which it is necessary to further cool the air and condense the moisture therein. The air is then reheated by means of a heating coil or by other absorption of heat until the desired temperature and the desired relative humidity result.

The cooling of a room or building requires sufficient refrigerating capacity to:

1. Overcome heat gains through walls, windows, roofs, floors, etc.
2. Overcome heat gains from occupants, lights, etc.
3. Cool the air to the necessary point.
4. Cool the vapor in the air to a point at which the air becomes saturated.
5. Condense the moisture to the form of water.
6. Cool the remaining vapor in the air to the necessary temperature.

The conditions surrounding each problem are such as to make it difficult to give any general rule as to the capacity required and each case must be the subject of careful determination.

The importance of the proper relative humidity of the air within our buildings is now receiving much more consideration than heretofore, both by physicians and

heating engineers. The natural relative humidity of outdoor air usually varies from sixty per cent to seventy per cent, although on rare occasions it may be found as low as fifty per cent, and on other occasions it may approach one hundred per cent, the point of saturation. In the most arid regions only is as low as thirty per cent to forty per cent found, while Denver, with its "dry" climate, averages about forty-eight per cent. Yet in furnace heated houses as low as twenty-five per cent, and in rare cases as low as sixteen per cent has been found, this being due to the heating of the air within the house. It is easy to understand that passing from an indoor atmosphere of twenty-five per cent relative humidity to an outdoor condition of sixty per cent to seventy per cent is very trying to the delicate mucous membrane of the upper air passages Generally speaking dry air is an excitant, sometimes causing sleeplessness and irritability, while moist air seems balmy and has a soothing effect which tends to produce restfulness and sleep.

Also a reasonable amount of moisture in the air is essential to the preservation of furniture, books, pictures, etc.

Medical authorities assert that an atmosphere which is too dry will cause parched lips and tongue, a dry, feverish condition of the skin and, particularly in those children inclined to lung diseases, a serious irritating cough. Dr. W. M. Wilson of the Weather Bureau makes the following statement: "The evaporative power in the air at a relative humidity of thirty per cent is very great, and when the tissues and delicate membranes of the respiratory tract are subjected to this drying process a corresponding increase of work is placed upon the mucous glands in order to keep the membrane in proper physiological condition, so that nature in her effort to compensate for the lack of moisture in the air is obliged to increase the functional activity of the glands which result in an enlargement of the gland tissues." He especially points out that catarrhal troubles are relieved, and frequently cured, by providing sufficient moisture in the air.

It is interesting to note the intimate connection of temperature and relative humidity. The dry air absorbs moisture from the body so rapidly as to make one seem cold, even though the temperature as indicated by the thermometer seems quite sufficient. It has been found that a temperature of 65° with a relative humidity of fifty per cent to sixty per cent is quite as comfortable as a temperature of 70° with thirty per cent to forty per cent relative humidity; and the former, besides being more healthful, would result in an economy in the operation of the heating plant. It may soon be that no system of heating will be considered entirely satisfactory if indoor relative humidity is disregarded, not alone as a matter of health, but as a matter of comfort, the moist air producing a quieting and comfortable sensation, a sense of relaxation and poise contrasting strongly with the feeling of nervous tension which is so frequently experienced in a heated dry room.

A full discussion of this subject is beyond the possibility of this paper, but it will be well to explain the distinction between absolute humidity and relative humidity, absolute humidity being the weight of moisture in grains per cubic foot at a given air temperature, and relative humidity indicating the ratio of the weight of moisture in a given space to the weight which the same space will hold when fully saturated at the same temperature, expressed in percentage. The dew point is the temperature at which saturation is obtained for a given weight of water vapor or moisture.

The relative humidity of the air may be obtained by the use of the hydrodeik, which consists of a wet and dry bulb thermometer mounted on a frame with chart from which direct readings of the humidity may be obtained without further calculations. The Sling Psychrometer, as used by the Weather Bureau, is probably the most accurate instrument in general use.

If the air enters a room at 70° temperature and thirty per cent relative humidity, it will contain 2.39 grains of moisture per cubic foot, and if a relative humidity of sixty per cent is desired, 2.39 grains of moisture must be added to each cubic foot of air. There are several ways of introducing this additional moisture. In a small system it may be done by the use of evaporating pans or by injecting steam into the air, but such methods are subject to the objections that the evaporation from the water pans may be insufficient and the use of the steam may produce odors.

The relative humidity in a building provided with apparatus for the artificial introduction of moisture into the air may be regulated within reasonable limits. Where moisture is introduced by means of evaporating pans or by the injection of steam, the Humidostat may be used to control the relative humidity. In large installations the humidity may be controlled by making use of the air washer above referred to, the water or air being heated so that the capacity of the air for moisture is increased, the point to which it is heated being such that its absolute humidity at saturation will result in the desired relative humidity when the air is warmed to the temperature of the room to which the air is to be introduced.

The use of these air washers also makes possible a dehumidifying of the air under certain conditions which may be quite as important as humidifying at times when there is excess of moisture in the air. If the air is brought into contact with cold surfaces or cold water in sufficient quantities the temperature of the air will be reduced by the transmission of heat from the air to the water. If dehumidification is to be carried far it may involve the installation of a refrigerating plant to provide the cool water necessary, or a refrigerating plant may be used for this purpose as described for the cooling of air.

There are many details which, in a small system, may be, and usually are, neglected, but which in a large plant become vitally essential. It is not to be expected that, in an article of this character all of these matters can be taken up, or that they can, without extended study and experience, be fully mastered. The explanations, formulas, and data given will make possible the design of a small plant by one reasonably familiar with warming and ventilating work, while the design of a large or especially important work will always remain within the province of the experienced warming and ventilating engineer working in conjunction with the architect; nor is extended argument necessary to prove that such an engineer should be entirely independent of any contracting or manufacturing interests.

Terra Cotta: Its Character and Construction—I.

BY CHARLES U. THRALL.

ARCHITECTURAL terra cotta, although one of the most important of building materials, and in these days of fireproof skyscraper construction, becoming more and more important as each year passes, is probably one of the least understood by most architects. Of course, it is known to be made of clay; is burnt in kilns; may be glazed and of almost any color; is hollow, therefore very light, weighing approximately 70 pounds to the cubic foot and will bear a crushing strain of 3,000 pounds per square inch: but such items as the direction and location of the interior partition walls and uses to which they may be put; the methods of support; the best location for joints; the necessary bonds; the sizes and shapes practical; etc., are all more or less hazy in the mind of the average architect. This may be accounted for:

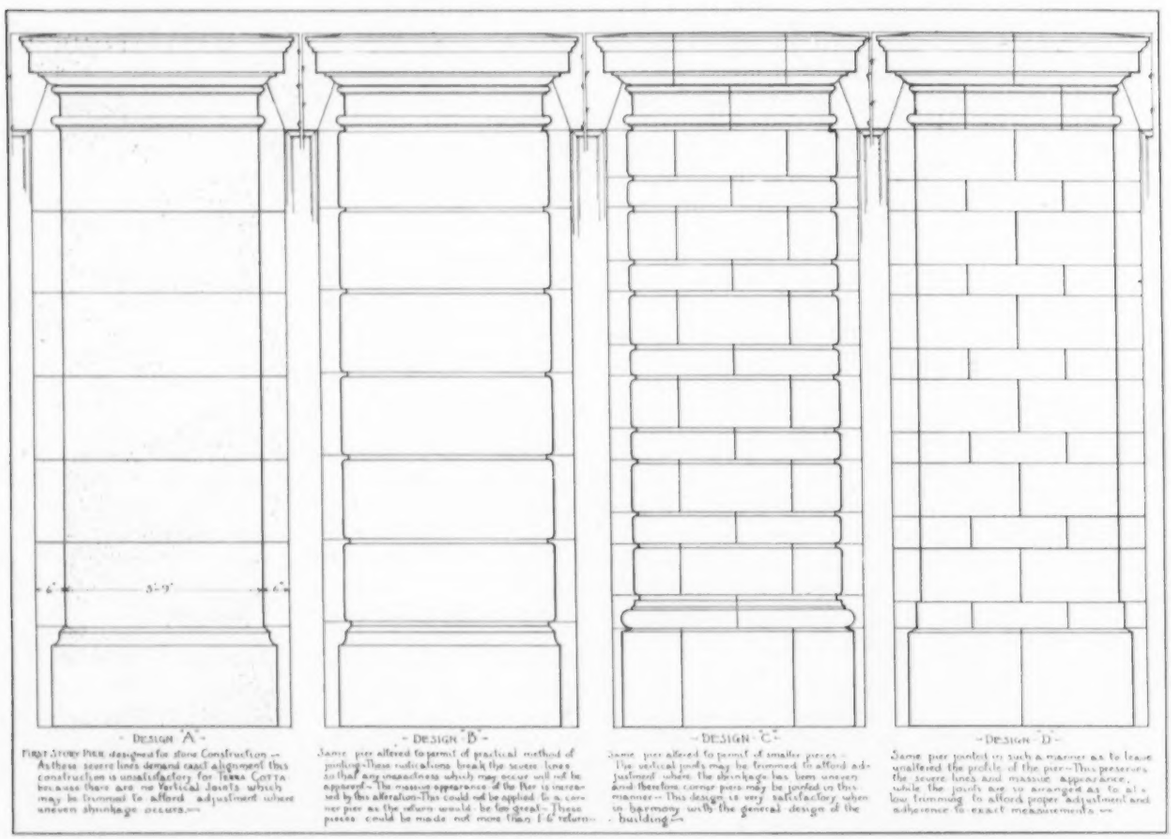

6"
5'-9"
6"
- DESIGN "A" -
FIRST STORY PIER designed for stone Construction — As these severe lines demand exact alignment this construction is unsatisfactory for Terra Cotta because there are no vertical joints which may be trimmed to afford adjustment where uneven shrinkage occurs. —
- DESIGN "B" -
Same pier altered to permit of practical method of jointing—These rusications break the severe lines so that any unevenness which may occur will not be apparent— The massive appearance of the pier is increased by this alteration—This could not be applied to a corner pier as the return would be too great— These piers could be made not more than 16" return— building—
- DESIGN "C" -
Same pier altered to permit of smaller pieces — The vertical joints may be trimmed to afford adjustment where the shrinkage has been uneven and therefore corner piers may be jointed in this manner— This design is very satisfactory when in harmony with the general design of the
- DESIGN "D" -
Same pier jointed in such a manner as to leave unaltered the profile of the pier—This preserves the severe lines and massive appearance, while the joints are so arranged as to allow trimming to afford proper adjustment and adherence to exact measurements —

PLATE II.

FIRST. By the fact that it is a ceramic material which, because of its complex nature, demands in its manufacture a large amount of scientific attention, thus requiring of the architect more general knowledge of the technique of its manufacture than he usually takes time to acquire.

SECOND. Its appearance is so much like that of stone that architects will treat it as such without any thought that terra cotta has a distinct character, which demands a treatment consistent therewith, to obtain results that are either artistic or practical.

THIRD. There has been a growing tendency among architects to leave the making of the terra cotta details showing the construction and jointing entirely to the manufacturer, the architect finally examining and approving these drawings before the manufacturer proceeds to make the work. Very often this examination is very superficial, or is made without regard to manufacturing difficulties, the architect making changes and insisting upon impracticabilities which the manufacturer feels that he must attempt against his best judgment as he cannot afford to lose the time necessary to go back to the architect and explain the advantage of his method of jointing or detailing. This, of course, does not tend to educate the architect so that he may understand terra cotta as he should to use it to the very best advantage.

FOURTH. Although the manufacture of architectural terra cotta is centuries old, having been in practice six hundred years before the birth of Christ, it was left to the progressiveness of the American Age to develop that method of construction that makes terra cotta a necessity; therefore, there is very little literature which may serve as a guide for those inexperienced in its use.

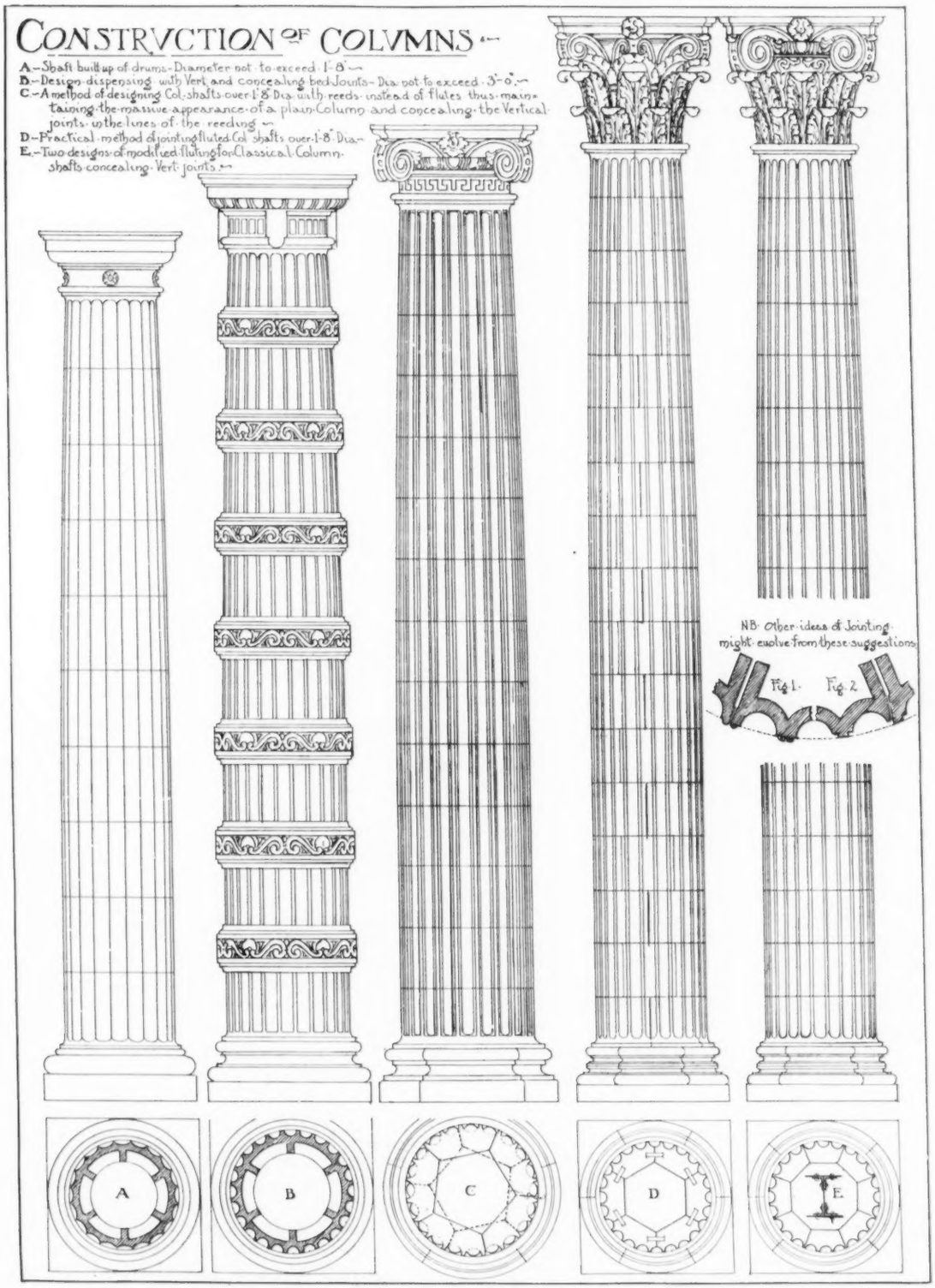

CONSTRUCTION OF COLUMNS.
A.—Shaft built up of drums.—Diameter not to exceed 1'-8".—
B.—Design dispensing with Vert. and concealing bed Joints.—Dia. not to exceed 3'-0".—
C.—A method of designing Col. shafts over 1'-8" Dia. with reeds instead of flutes thus maintaining the massive appearance of a plain Column and concealing the Vertical joints upon the lines of the reeding.—
D.—Practical method of jointing fluted Col. shafts over 1'-8" Dia.—
E.—Two designs of modified fluting for Classical Column shafts concealing Vert. joints.—
NB. Other ideas of Jointing might evolve from these suggestions
Fig 1.
Fig 2.
A
B
C
D
E

PLATE I.

Owing to the fact that a block will shrink approximately one inch to every foot while in the process of manufacture, and that the degree of this shrinkage is governed by so many influences, such as the size and shape of the block to be made, the stiffness of the clay when pressed in the mold, the dryness or absorbing power of the mold into which the clay is pressed, the exactness with which the clay ingredients have been mixed, the varying influences of atmospheric conditions while the block is drying, the extreme heat to which it is burned, which necessarily varies to some extent in the different portions of the kiln, due to a thousand and one causes, all make it a practical impossibility, even with the utmost care and skill to control this shrinkage to minute exactness. Therefore, a piece, say three feet (3′) long should shrink three inches (3″), but perhaps owing to the way it has to be laid in the kiln, or for some other cause, it might shrink ⅛ or ¼ of an inch too much or too little. Ordinarily the direction of the shrinkage in a block of terra cotta converges to a common center, but there are many pieces whose size and shape are such that the shrinkage strains pull against or away from each other, and consequently there is always a tendency to warp to a greater or less extent.

The leading manufacturers by careful methods and artificial means control this unequal shrinkage and warping tendency to a large extent, but as a safeguard the jointing should be arranged in such a manner that cutting or fitting may be done without injury to the members of the moldings or ornament and thus afford sufficient adjustment to counteract the fault of the warping and irregular shrinkage and thereby obtain proper alignment.

Take for instance the construction of a column whose flutes must take up properly or its beauty be lost entirely. If the diameter is approximately 1 foot 4 inches to 1 foot 8 inches or less, it is possible to obtain fairly good results with a column made in drums, as at "A," Plate 1, especially if the height of the courses is not more than 1 foot or 1 foot 4 inches. Such columns may be made with a hole in the center to admit a steel column, providing the steel is arranged so as to slide the terra cotta pieces down from the top of the steel column. But the best way to design a terra cotta column is to have bands around it, as shown at "B." The projection of the bands break the line of the flutes so that there are no members to take up, consequently any mechanical inaccuracies are not apparent to the eye, and both the top and bottom beds of the fluted piece could be trimmed if necessary to maintain certain heights. For example, the large columns to the central feature of the New York Hippodrome were originally designed without bands, but to avoid bad alignment the bands were added with very satisfactory results.

The large columns in the concourse of the Union Station at Washington were originally designed to be plain, but the diameter was so great that it was practically impossible to obtain satisfactory alignment without cutting the drums with vertical joints, but these unsightly joints on a white glazed column were not acceptable to Mr. Burnham. To put flutes on these columns would spoil their design, as the sinkage of the flute would detract from the massive appearance desired. It was finally decided to make the columns with flutes and reeds, as shown at "C," on Plate 1, and thus avoid a deep sinkage into the body of the shaft, such as a flute would make, and yet allow opportunity to place concealed vertical joints in the lines of the reeding which could be trimmed to afford adjustment.

When a column is fluted, it is not very objectionable to place vertical joints in the center of certain flutes, as the additional lines made by the joints are not particularly apparent, being lost in the many lines made by the fillets between the flutes, so that large columns or those with a steel column in the center are often treated in this manner, as shown at "D," but in the case of white glazed material it is better to design a special fillet so as to conceal the joint, as shown at "E," Fig. 1 and Fig. 2. Other ideas might evolve from these suggestions. For instance, the architects of the Masonic Temple, Brooklyn, have arranged their large columns to be made in very small pieces about four or five inches high and one foot long, the vertical joint being small and in the center of each alternate flute, while the horizontal joint is an inch thick. As the flutes are colored "yellow" and the fillets "cream" the design is very interesting, and the mechanical execution of the work is excellent.

Careful adaptation of design to material applies to any architectural feature—for instance, the 3 foot 9 inch pier, shown on Plate 2, design "A," although very simple for stone construction, is impractical for terra cotta, unless properly jointed. As all terra cotta now manufactured has a surface more or less vitreous, even if not glazed, the face cannot be trimmed or cut away without obliteration of the surface exposing the more porous and probably different colored body. Therefore, these large pieces of terra cotta which will probably vary in size to some extent cannot be cut to fit each other as there are no vertical joints to afford adjustment. If it is desired that these pier pieces be made without vertical joints, the introduction of the rustications with the corners rounded, as shown by design "B," will so break up the vertical line of the corner of the pier that any inexactness in size that might occur will not be apparent to the eye, as there are no faces that must meet each other in the setting, the jamb being jointed into pieces separate from the pier pieces and having sufficient joints to trim for adjustment. Even though there were ½ inch or more difference in the size of the pieces, they could be sorted out and the smaller ones placed at the top of the pier, while the larger ones are below, and it would be impossible without the aid of a straight edge to detect the variation. But if a corner pier occurred, this method would be impracticable on account of the extent of the returns making it impossible to keep the pieces square, 1 foot 6 inches being the extreme depth to which such pieces could be made. Therefore, design "C" would meet most requirements, as the corner piers could also be treated in this way, provided, of course, that it harmonized with the general design of the building.

In this design there are joints that could be trimmed wherever necessary to afford adjustment so as to keep the proper measurements, while the narrow pieces have far less tendency to warp.

If the suggestion of rustication cannot be used on account of the general design of the building and the

severe straight lines of the pier must be maintained, design "D" will be very satisfactory as it has all the advantages of design "C" except the rustications. The pieces after being burned should be placed on the rubbing bed and the joints ground down until they are as straight and square as the best cut stone.

If on each course there were a very faint design of ornament of a guilloche or similar pattern which would be hardly more perceptible than a design on stamped leather, it would so break up the surface as to make any inaccuracies indiscernible. If the pier were white glazed terra cotta, this low, faint design of ornamentation would be very attractive. The reader may say, "Why use terra cotta at all, and have all this bother about designs and joints?" The answer is that for columns and piers, as well as for other architectural features, terra cotta has advantages that cannot be overlooked.

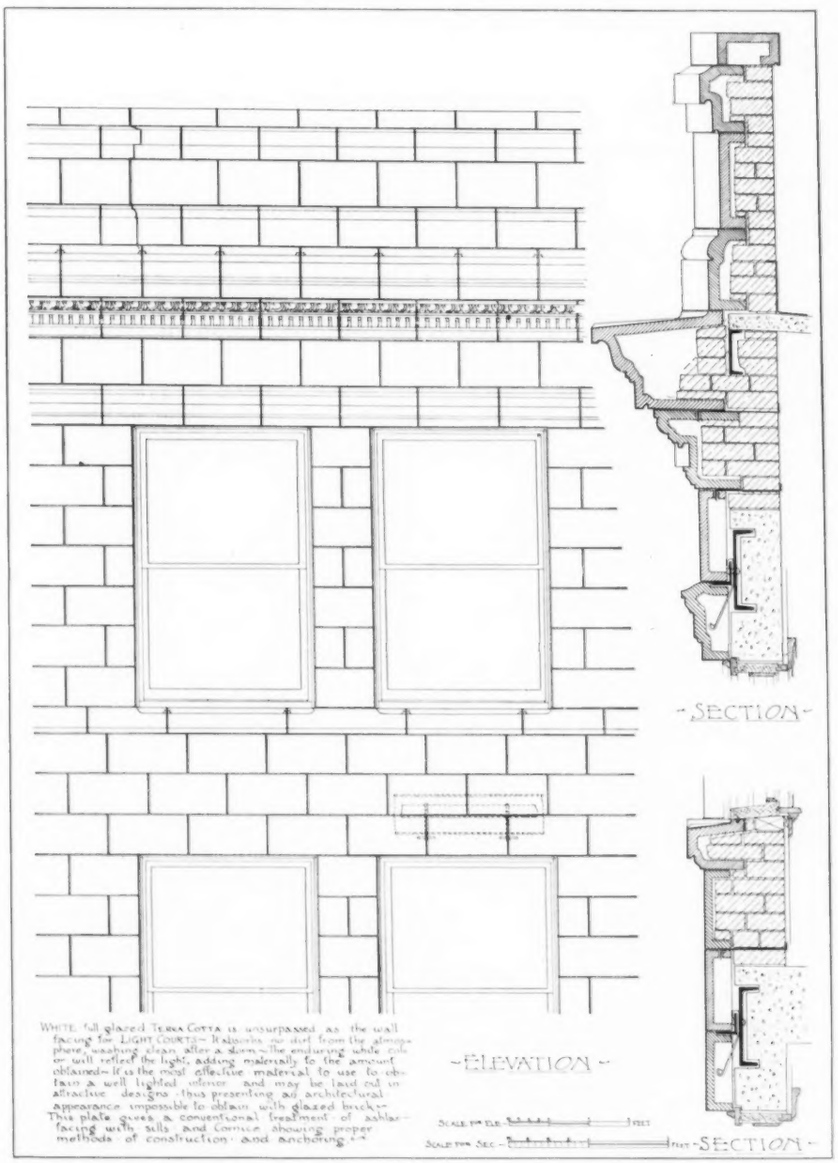

WHITE full glazed TERRA COTTA is unsurpassed as the wall facing for LIGHT COURTS— It absorbs no dirt from the atmosphere, washing clean after a storm— The enduring white color will reflect the light, adding materially to the amount obtained— It is the most effective material to use to obtain a well lighted interior and may be laid out in attractive designs thus presenting an architectural appearance impossible to obtain with glazed brick— This plate gives a conventional treatment of ashlar facing with sills and cornice showing proper methods of construction and anchoring—
-ELEVATION-
-SECTION-
-SECTION-

PLATE III.

In regard to the columns there is the element of "cost." Fluted columns and Corinthian Capitols carved in stone are often eight times as expensive as terra cotta, owing to the fact that the terra cotta is made from molds from which many pieces may be reproduced at comparatively slight expense; therefore, in duplication, there is economy when terra cotta is used. Further, the modeling of a terra cotta Corinthian or Ionic Capitol, or in fact any ornamental feature, is more satisfactory than a similar feature carved in stone because in the case of terra cotta the modeling is made directly in the clay, so that every piece made may bear the tool marks or the direct impress of the artist's hand, while in the case of stone an otherwise beautiful ornamental feature is often spoiled by the heavy clumsy work of a stone carver who copies his work from a plaster cast of the artist sculptor's model. Then there is the advantage of the fireproof terra cotta shell protecting the steel columns encased therein; the fireproof qualities of terra cotta being acknowledged by the best authorities as being superior to those of any other material. Also the opportunity for a design in beautiful and lasting colors, the greatest range of shades is obtainable. Its durability when properly made is unquestionable. The ancients made tomb ornaments of terra cotta probably with a knowledge of its durability. Not only will it stand all the disintegrating influences of time, but it will retain the color of its glazed surfaces practically undimmed for ages.

Plate 3 shows a suggestion for the use of white glazed material for the light court of a skyscraper. Instead of the matt surface which is preferable from an artistic standpoint for exterior walls, the material should have a full lustrous glaze when used for light courts, as it will reflect more light than if built of any other material.

Competition for a Brick House.

REPORT OF THE JURY OF AWARD.

THE program of this competition is summed up in the words, "A charming brick house of moderate cost," and the jury was glad to find among the one hundred and forty-five designs submitted to them so many that literally comply with these terms. Selection is made somewhat easier by the care with which was considered the item of cost. The charm readily speaks for itself. It is notorious among architects that published designs, especially in non-technical journals, can usually not be built for anywhere near the marvelous prices or estimates with which they are accompanied. Since the object of this competition was to present a convincing case for the wider use of brick in dwelling houses, it was essential that the ten thousand dollar limit should be understood by the jury in the light of their experience as practicing architects. The program to them implies simplicity, modesty, a "sweet reasonableness," and includes good planning, good accessories, and an interesting use of brickwork.

First Prize. An able and characteristic brick design, with good plan, good mass, attractive "features," i.e., gables, chimneys, bays, and roof, a well studied and convincing effort.

Second Prize. A small and picturesque house, counting for far more than it would cost, a *multum in parvo* plan, simple mass, and modest but adequate details. The whole exterior depends for its effectiveness upon the color and texture of the brickwork, brought out by a somewhat daring contrast with shingled roofs. This effectiveness is almost unattainable in any other material.

Third Prize. This is a good design for other materials than brick, but an excellent design in brick by reason of such touches as the rounded gables and the slender chimneys. The plan is compact, and has agreeable rooms and abundant convenient closets. It would build well. The detail of brickwork is rather uninteresting, but the proportions of the building are notably good.

Fourth Prize. In this design the chief excellences of the first prize design are present in a different guise. Tall chimneys, strong gables, a high plain roof, and broad wall surfaces show the architect's skill in the use of the prescribed material. As if this were not enough, he has diapered his walls, as the scale details show, almost to the point of restlessness, an effect which is exaggerated, probably, by the rendering, for the design does not need to be carried out in red brick on yellow. The plan, though convenient, has some details unusual in this country. We do not serve meals from the kitchen through the back hall. The inglenook in the living room is an effective feature, both in plan and perspective. The bedrooms would be better for cross ventilation.

First Mention. A simple and effective design, somewhat reminiscent, clever details of brickwork, a pleasing perspective. The design as a whole too ambitious and dangerously near the limit of cost.

Second Mention. A simple, pleasing design, somewhat fussily rendered. It is, however, an excellent example of the kind of house that this competition was expected to bring out, economical of space and materials, and lending itself to accessories of porch, terrace, planting, and approaches. Good at the outset, it cannot fail to grow more beautiful with time.

Third Mention. A design that appealed to the judges, in spite of its presentation in a bird's-eye view, which is deplorable. The elevation and details show excellent taste and training. The plan is not so good as many of the others.

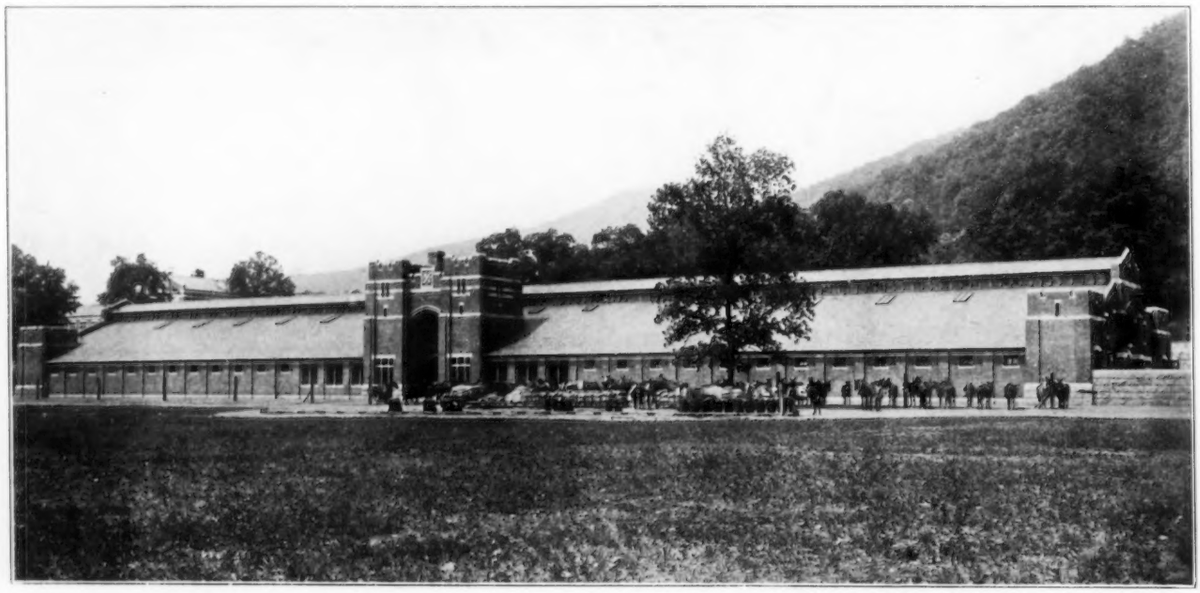
Fourth Mention. A design that, because of its assertive simplicity, cannot be overlooked. The detail of the brickwork is most interesting, and redeems the somewhat uncompromising angular mass. The plan is fussy, and the servant's room and bath in the second story, five steps below the remainder of the floor, would not readily fit the elevation.

Fifth Mention. The published drawing does not do justice to the design, which is carefully studied, and gives a well proportioned picturesque exterior and very ample, perhaps too ample, accommodations on each floor. This and other designs show a servant's bedroom on the ground floor, a questionable arrangement in many localities.

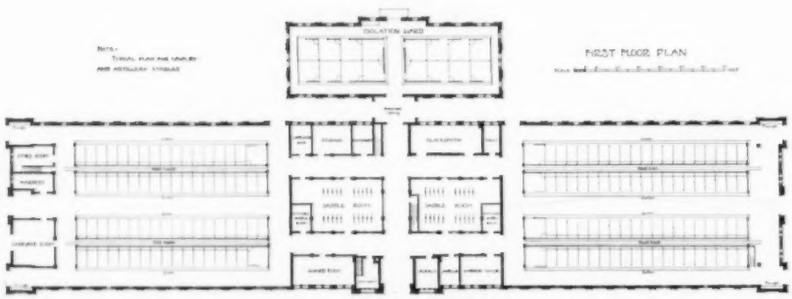
Sixth Mention. One of the very few attempts to design a brick house with a flat roof, interesting in that respect and because of the detail of the brickwork, which vindicates a design that might also be worked out in concrete. Although simple in mass, the planning is so generous that this mention gives the designer the benefit of a very considerable doubt.

J. RANDOLPH COOLIDGE, JR.,
J. LOVELL LITTLE, JR.,
GUY LOWELL,
HUBERT G. RIPLEY,

Jury of Award.



ARTILLERY STABLES.

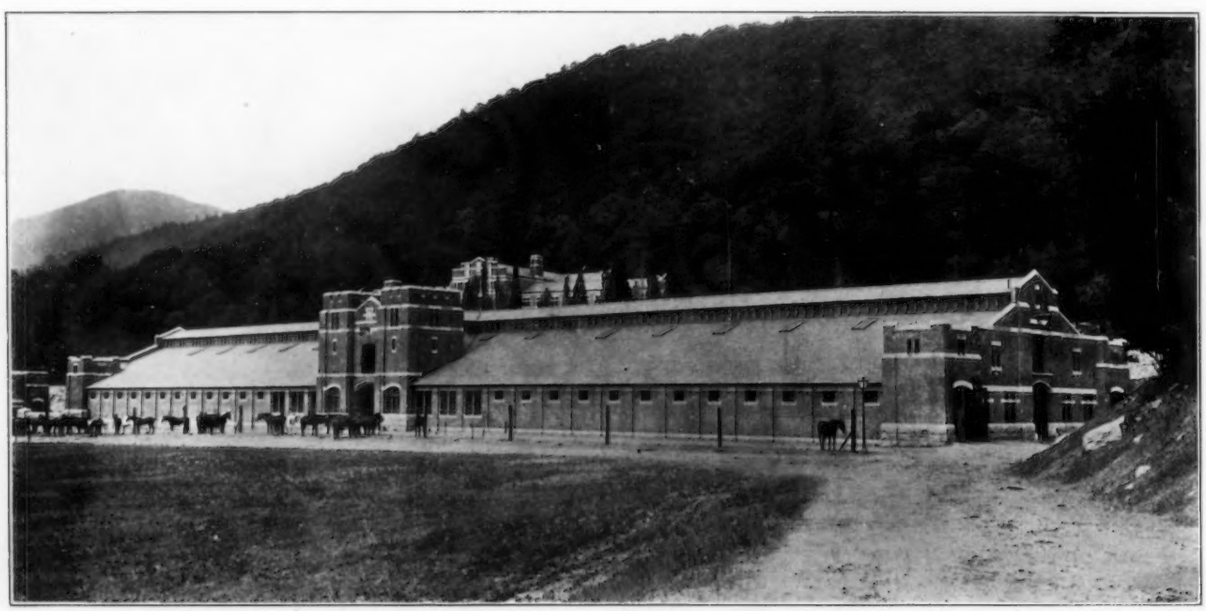


U. S. MILITARY ACADEMY,

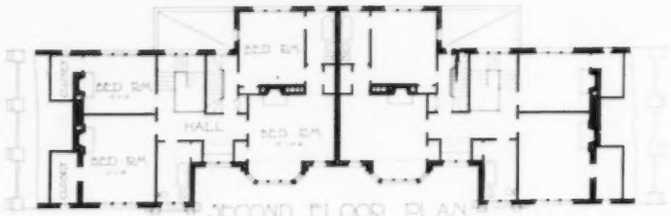
WEST POINT, N. Y.

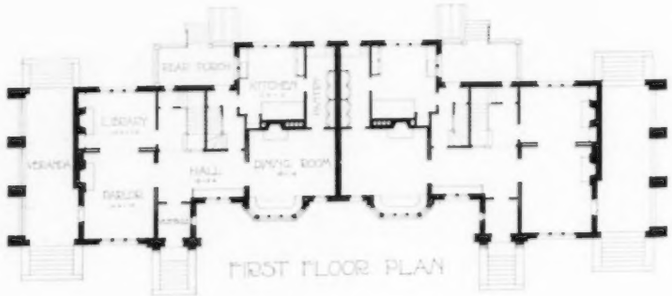
CRAM, GOODHUE & FERGUSON,

ARCHITECTS.



CAVALRY STABLES.





CAPTAINS' QUARTERS, NO. 1.

U. S.

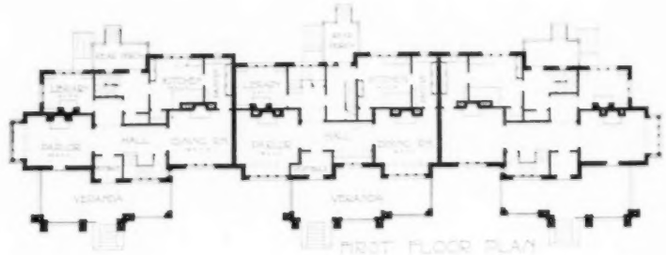
MILITARY ACADEMY.

WEST POINT, N. Y.

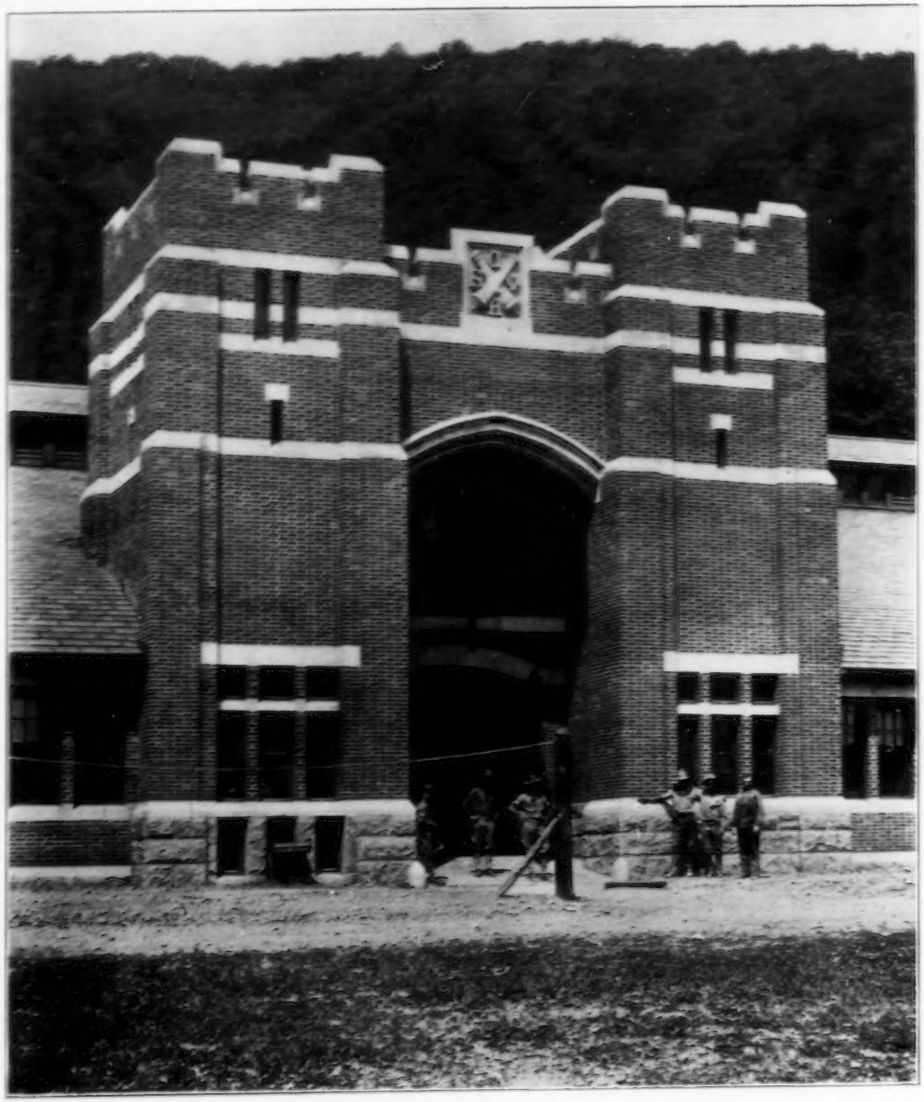
CRAM,

GOODHUE & FERGUSON,

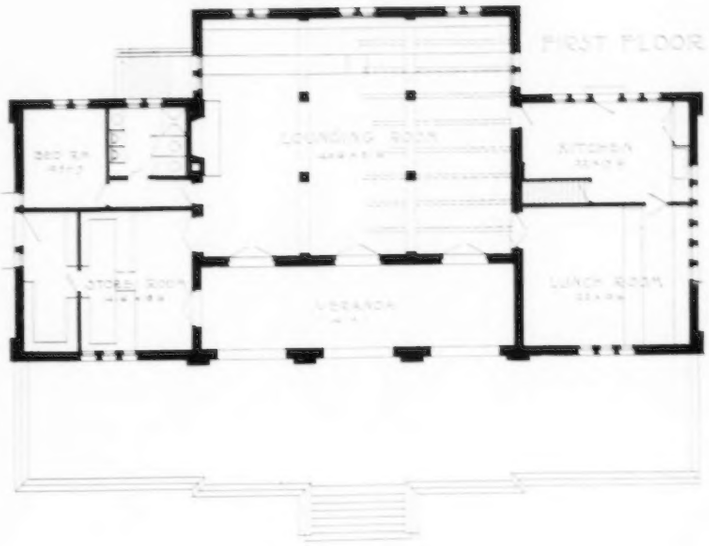
ARCHITECTS.



LIEUTENANTS' QUARTERS, NO. 3.

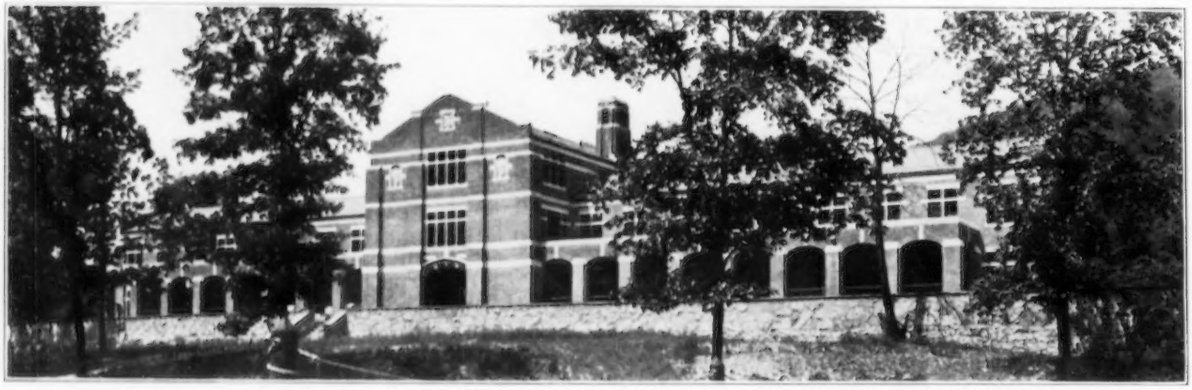


DETAIL OF ARTILLERY STABLES.

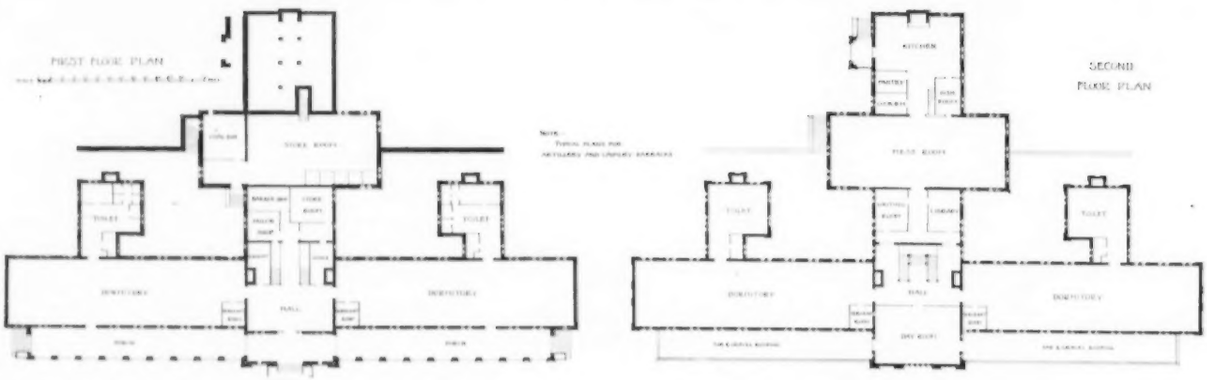


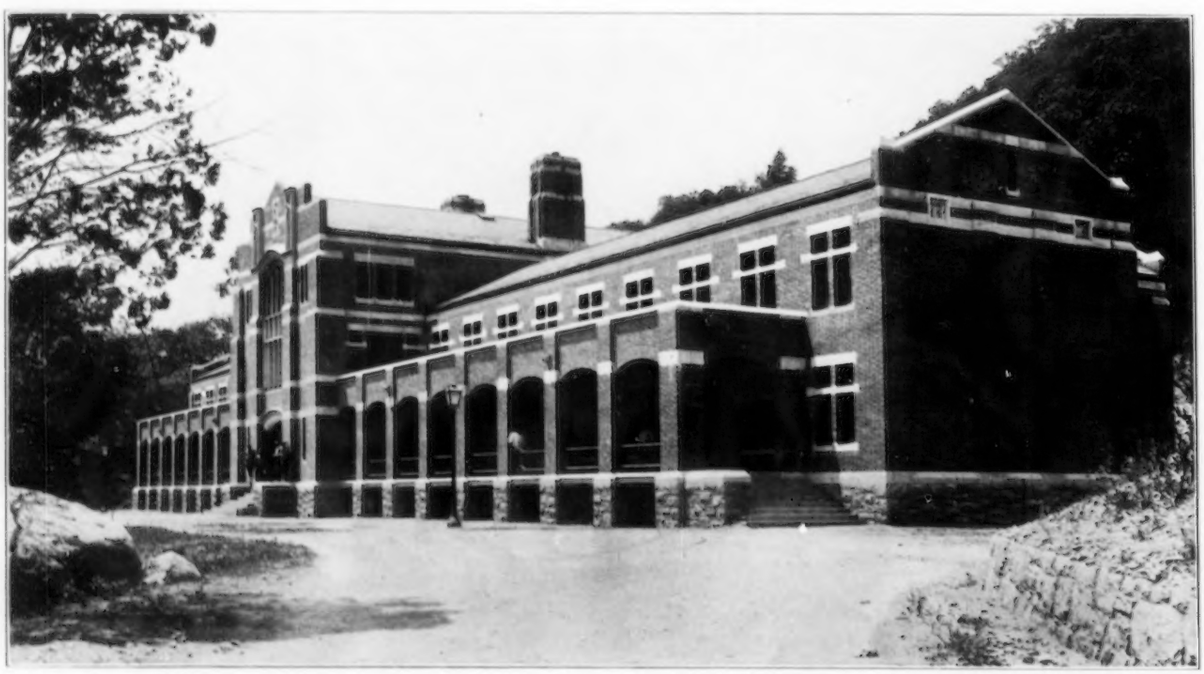
BRANCH POST EXCHANGE.

U. S. MILITARY ACADEMY, WEST POINT, N. Y.
CRAM, GOODHUE & FERGUSON, ARCHITECTS.



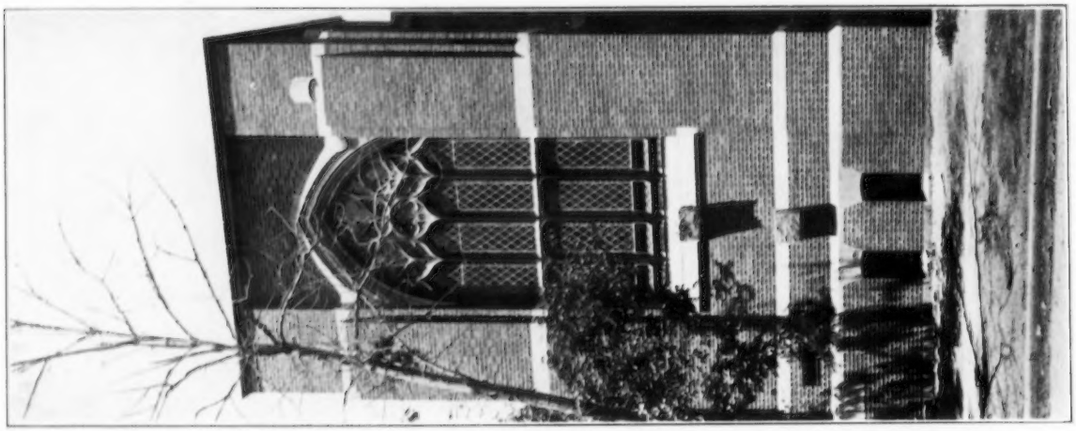
ARTILLERY BARRACKS.





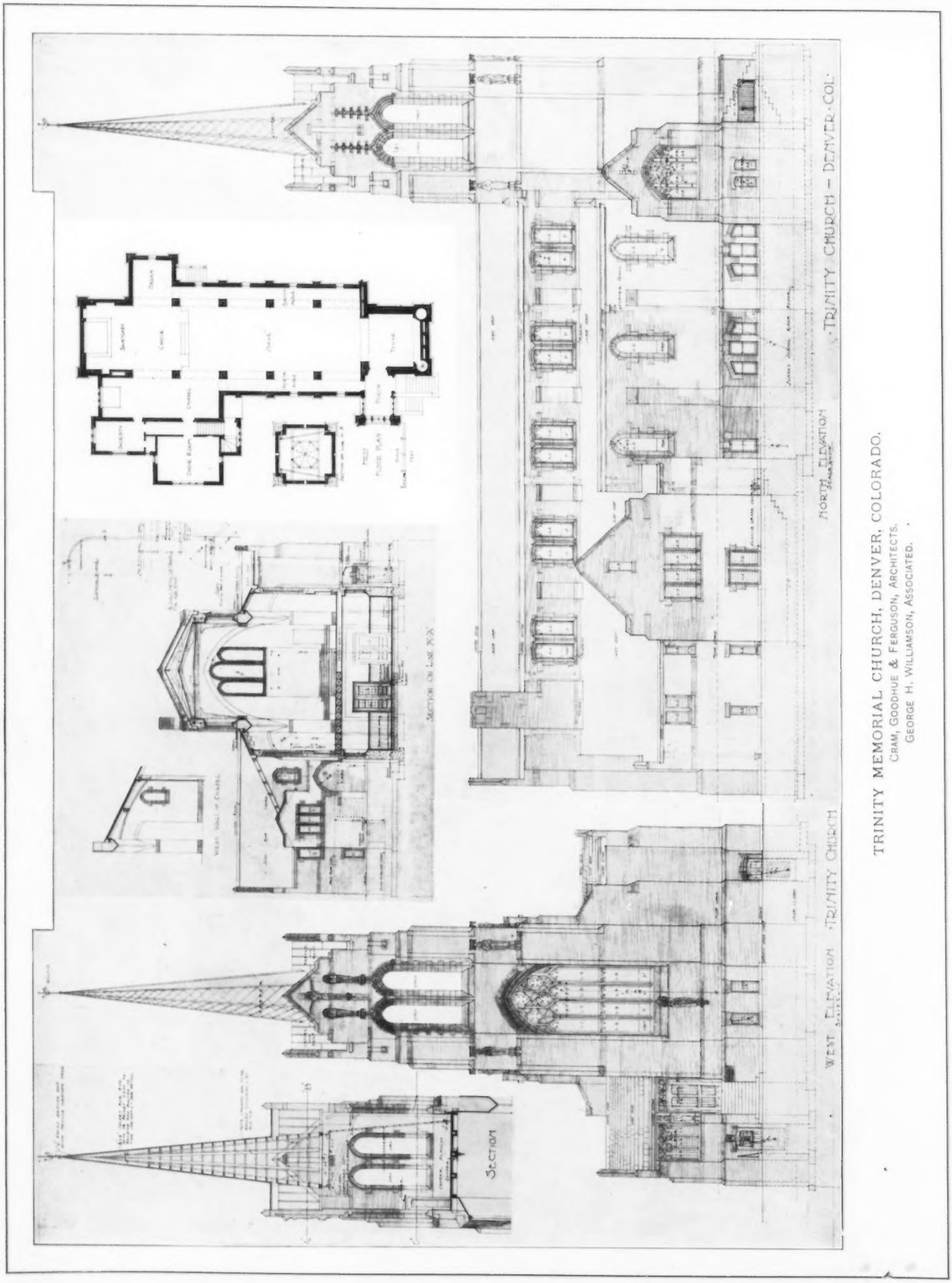
CAVALRY BARRACKS.

U. S. MILITARY ACADEMY, WEST POINT, N. Y.
CRAM, GOODHUE & FERGUSON, ARCHITECTS.



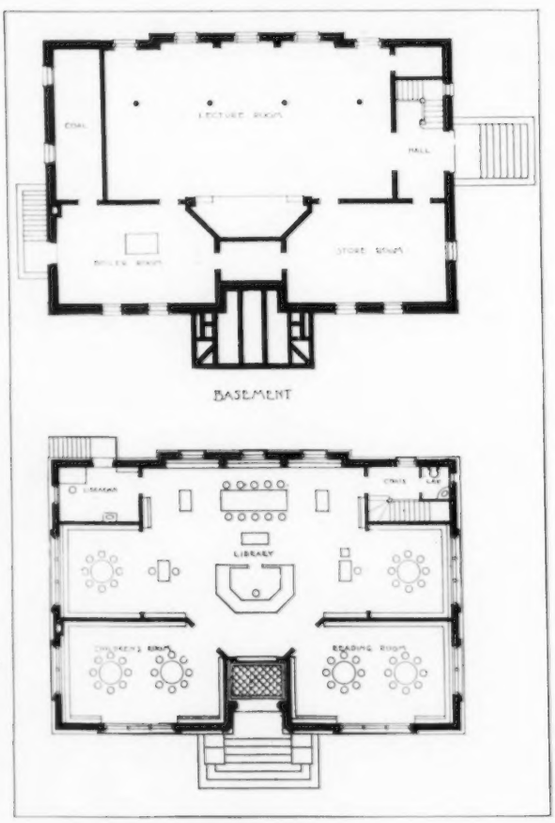
TRINITY MEMORIAL CHURCH, DENVER, COLORADO.
CRAM, GOODHUE & FERGUSON, ARCHITECTS. GEORGE H. WILLIAMSON, ASSOCIATED.

UNIV. OF MICH.



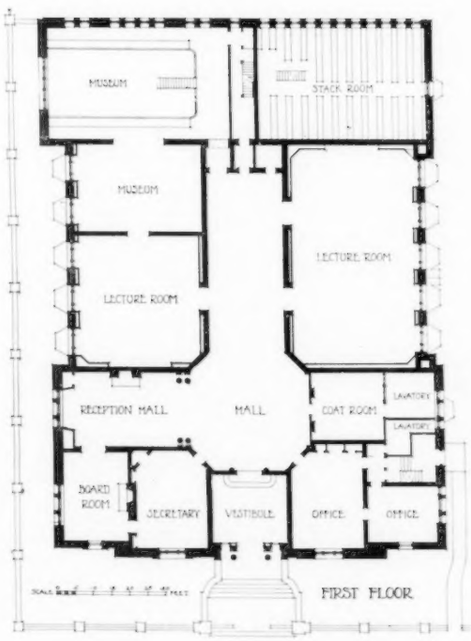
TRINITY MEMORIAL CHURCH, DENVER, COLORADO.

CRAM, GOODHUE & FERGUSON, ARCHITECTS.
GEORGE H. WILLIAMSON, ASSOCIATED.



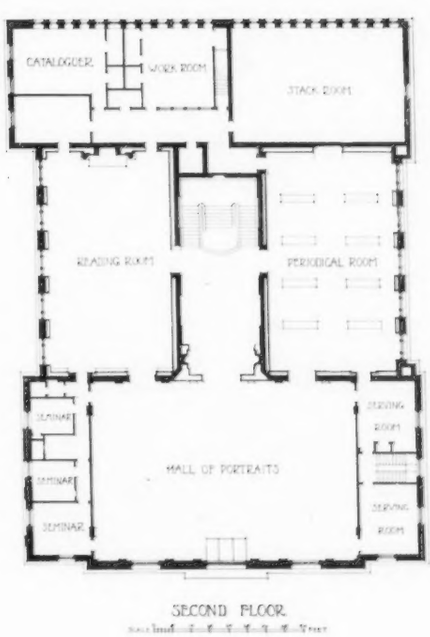
LIBRARY AT WILLOUGHBY, OHIO.
WILLIAM WARREN SABIN, ARCHITECT.

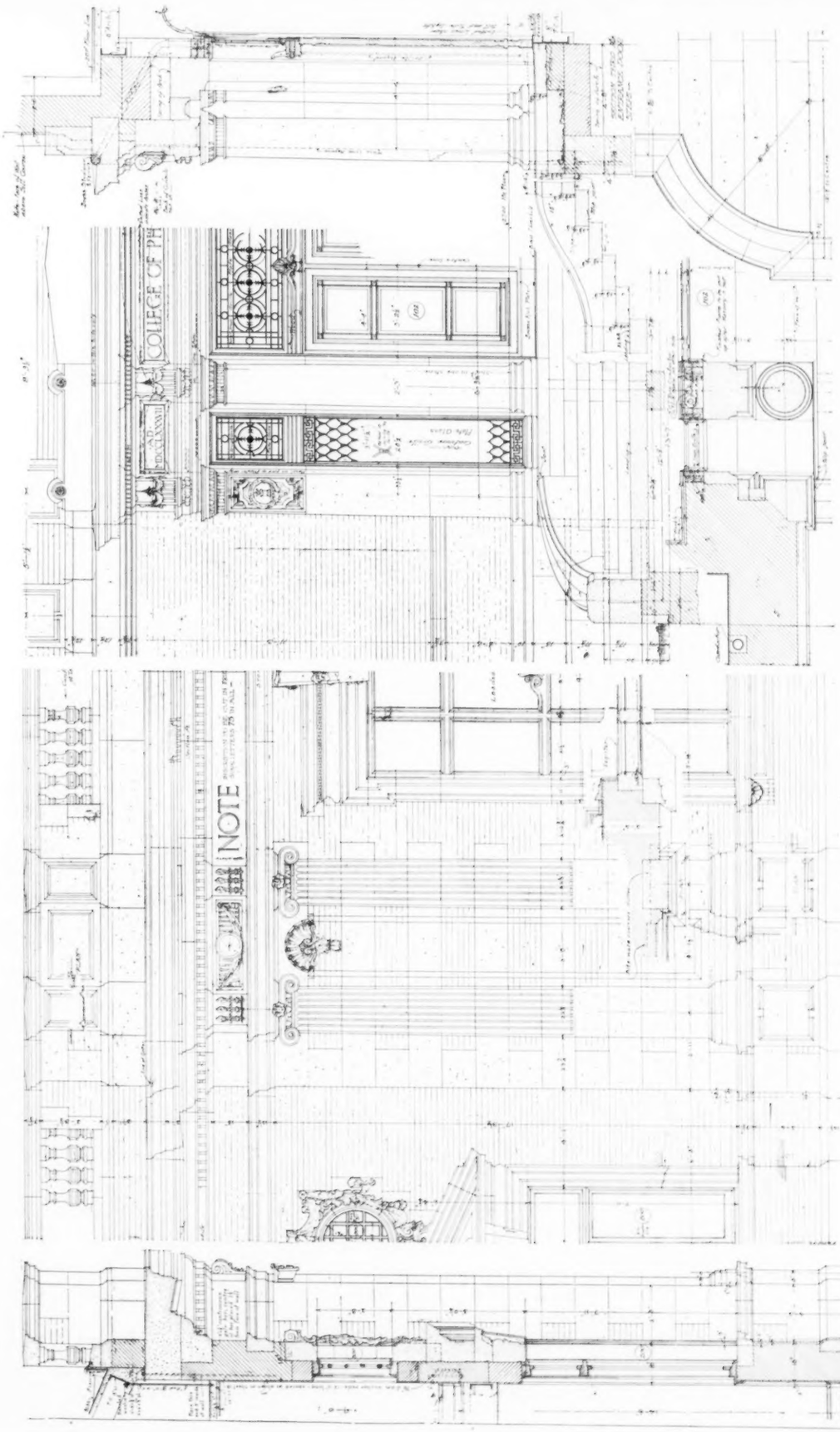
UNIV. OF MICH.



OFFICE BUILDING
AND
LIBRARY
FOR THE COLLEGE
OF PHYSICIANS,
PHILADELPHIA,
PA.

COPE & STEWARDSON,
ARCHITECTS.

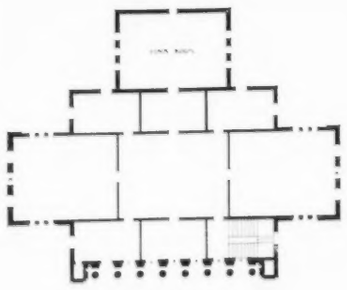




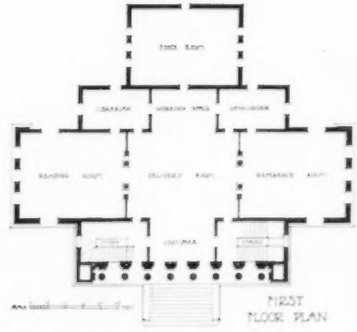
DETAILS OF FRONT ELEVATION.

OFFICE BUILDING AND LIBRARY FOR THE COLLEGE OF PHYSICIANS,
PHILADELPHIA, PA.

COPE & STEWARDSON, ARCHITECTS.



SECOND FLOOR PLAN

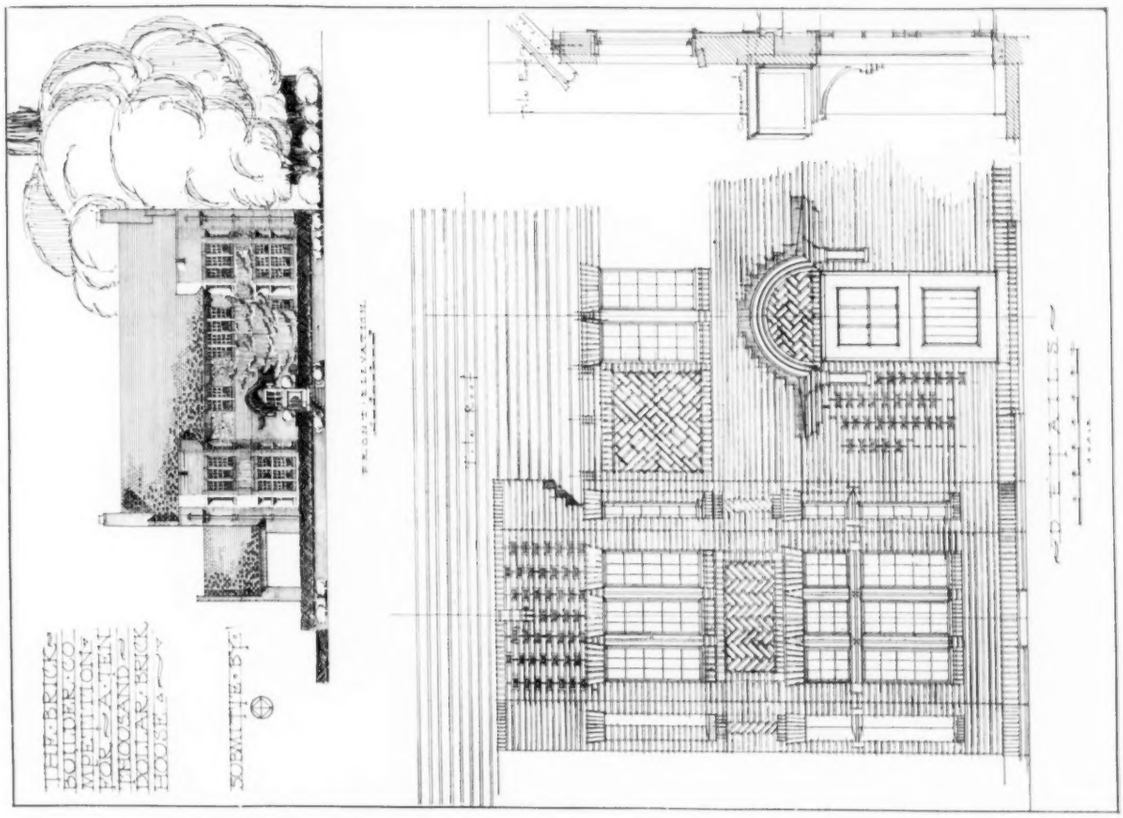


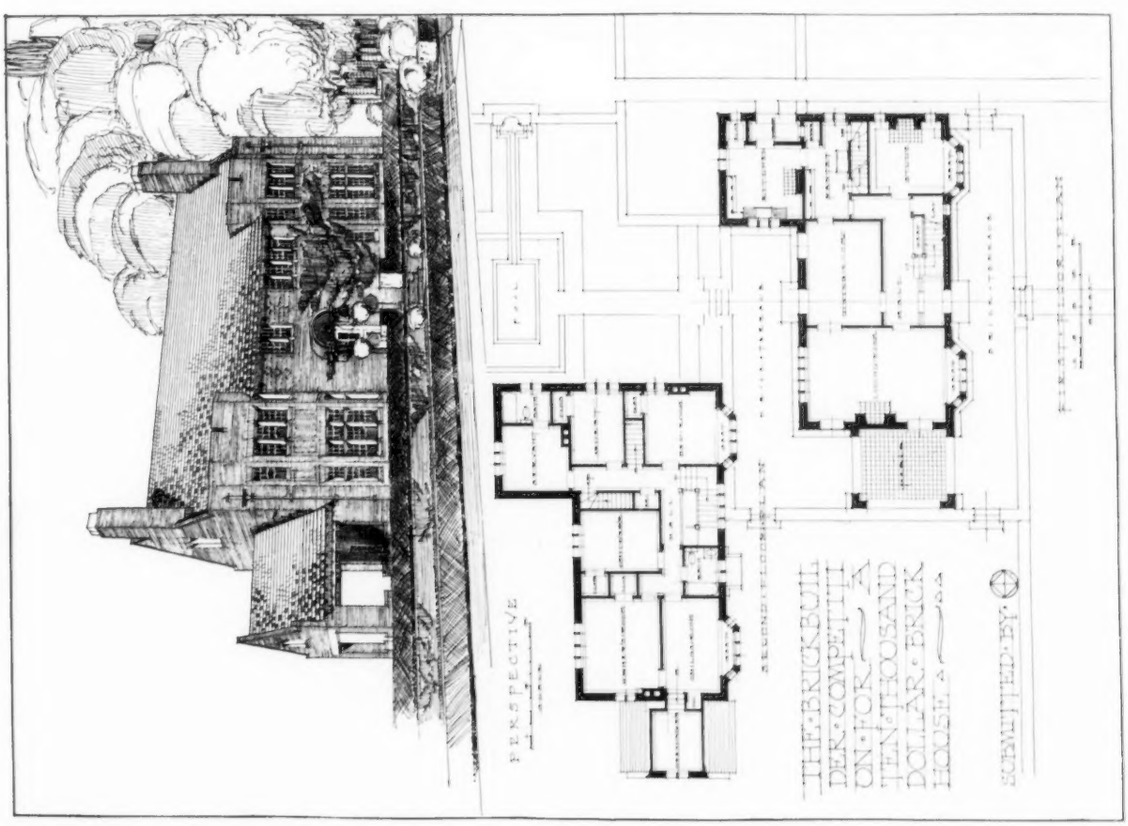
FIRST FLOOR PLAN

FAIRMOUNT COLLEGE LIBRARY

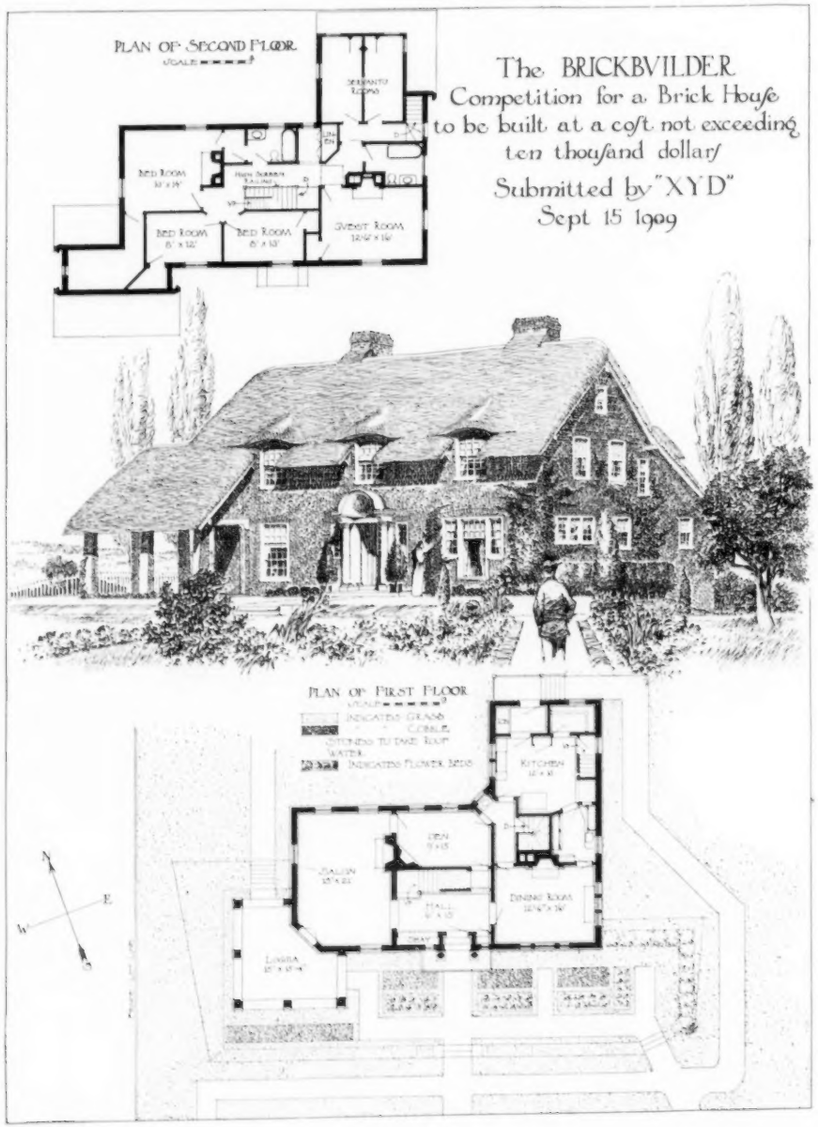
WICHITA, KANSAS.

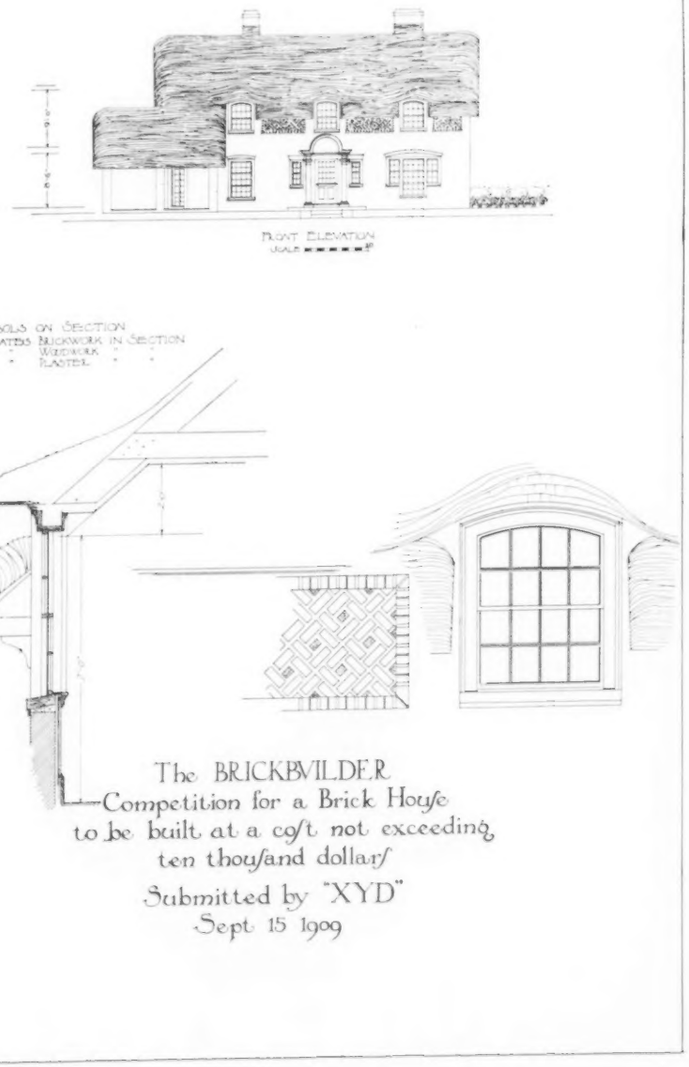
ALBERT RANDOLPH ROSS, ARCHITECT.



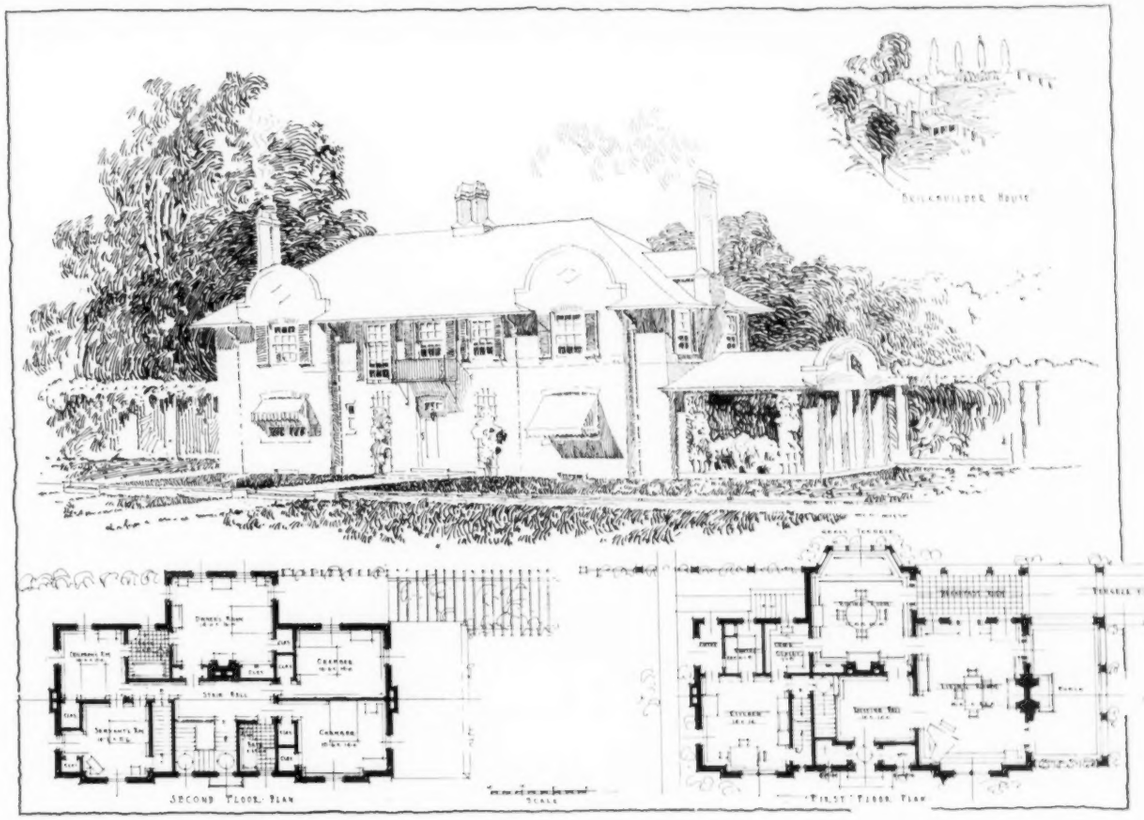


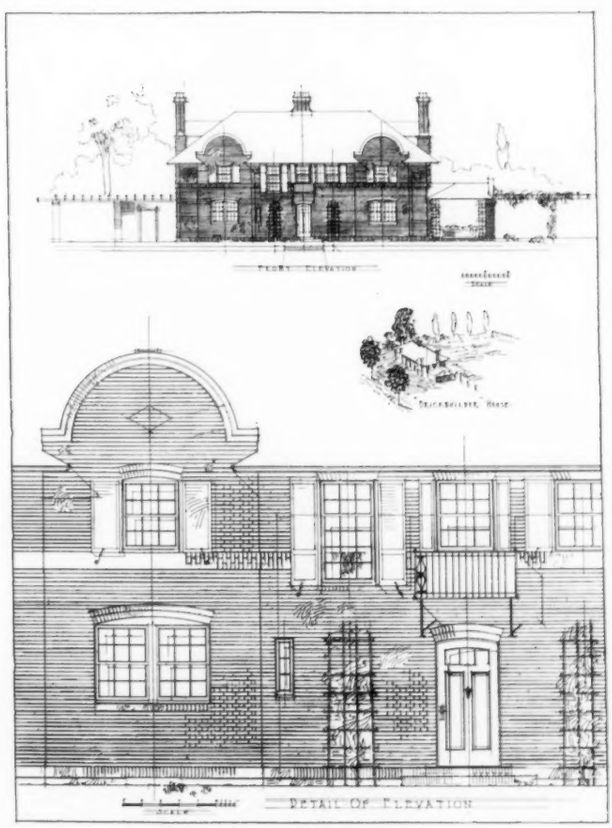
FIRST PRIZE DESIGN. THE BRICKBUILDER COMPETITION FOR A BRICK HOUSE.
SUBMITTED BY ROBERT A. TAYLOR, CAMDEN, N. J.





SECOND PRIZE DESIGN. THE BRICKBUILDER COMPETITION FOR A BRICK HOUSE.
SUBMITTED BY WILLIAM D. AUSTIN, BOSTON, MASS.

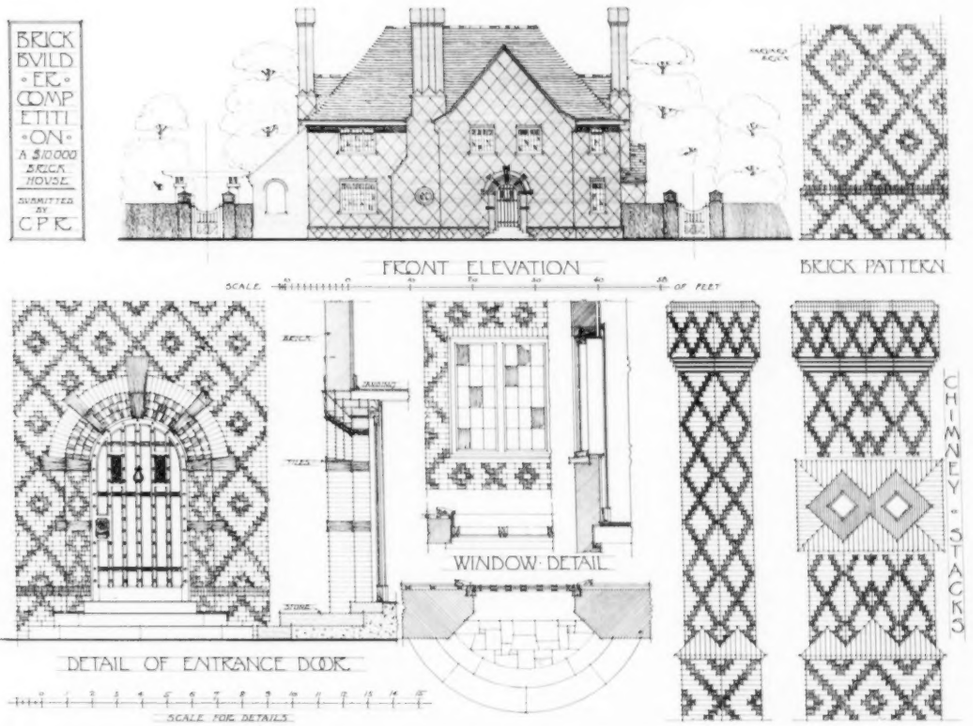




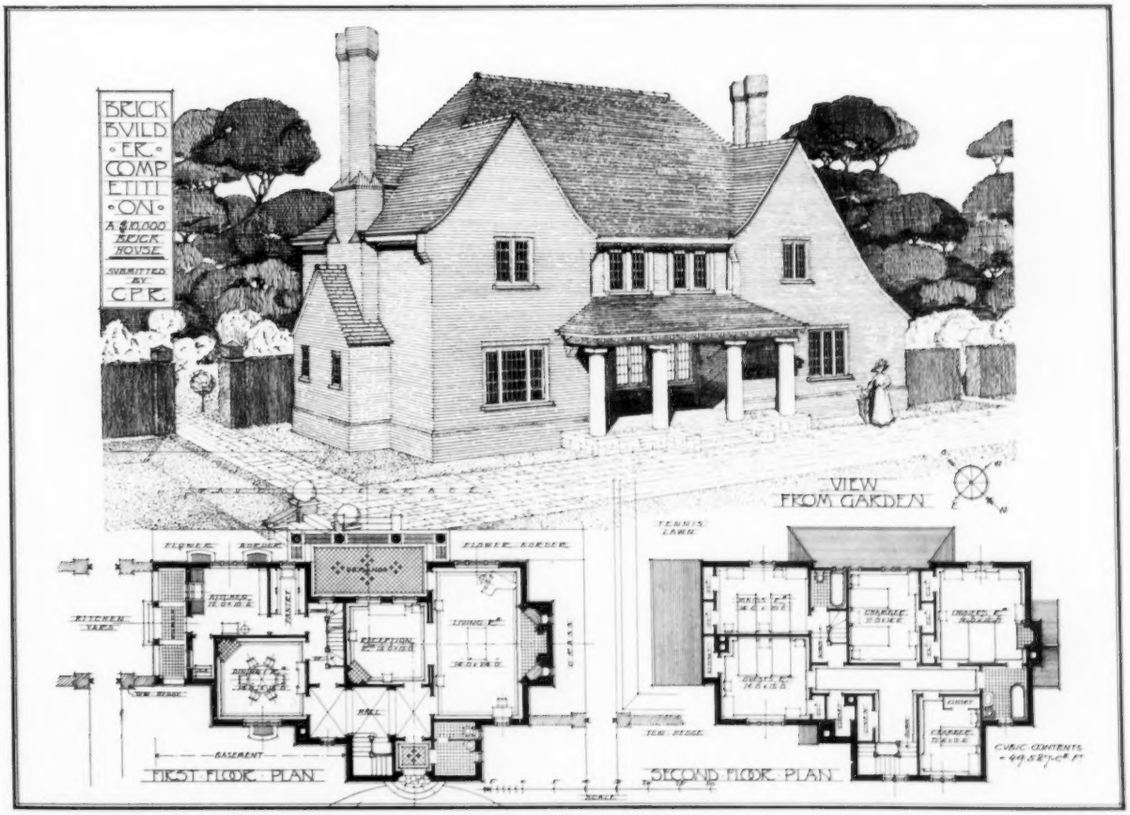
THIRD
PRIZE DESIGN.
THE
BRICKBUILDER COMPETITION
FOR A
BRICK HOUSE.

SUBMITTED BY
CHARLES C. CLARK,
BOSTON, MASS.

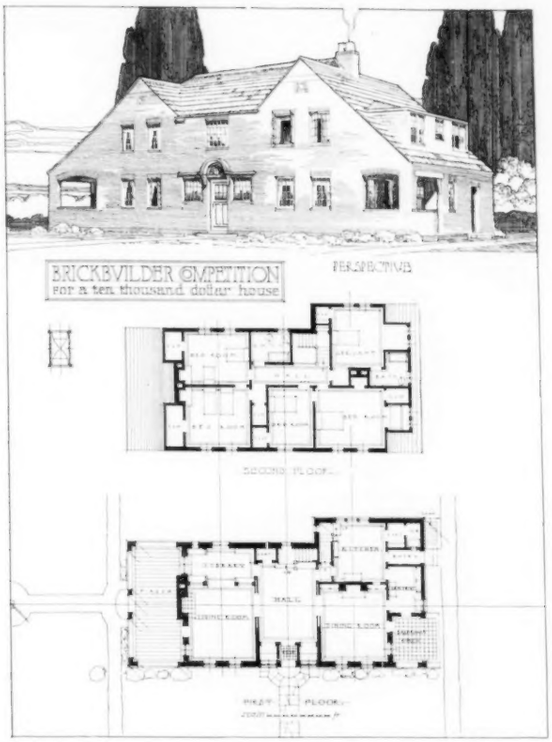
FOURTH PRIZE DESIGN.

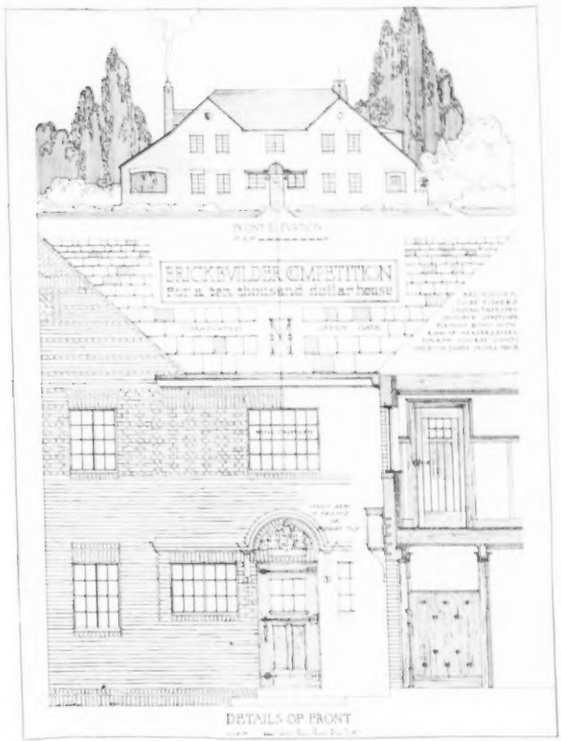


SUBMITTED BY HAROLD J. GRAVENOR, MONTREAL, CANADA.

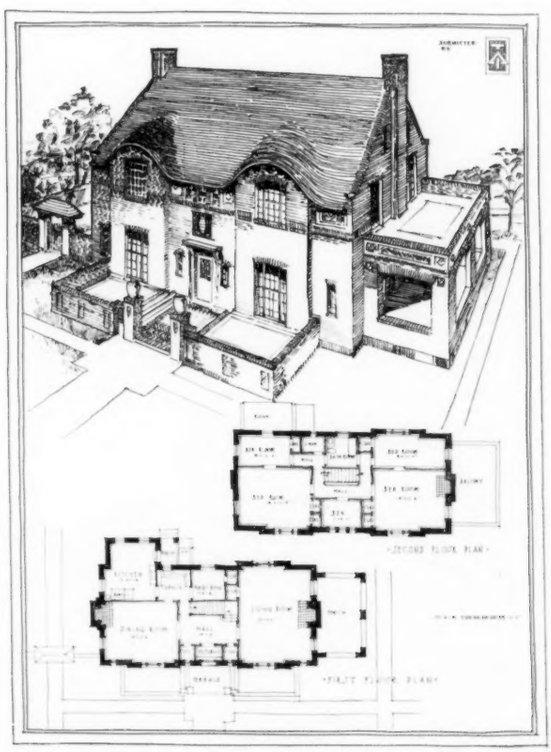


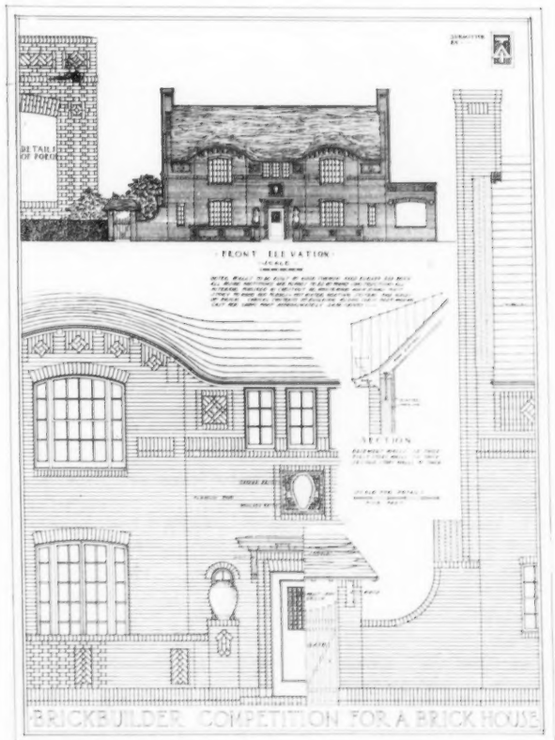
THE BRICKBUILDER COMPETITION FOR A BRICK HOUSE.





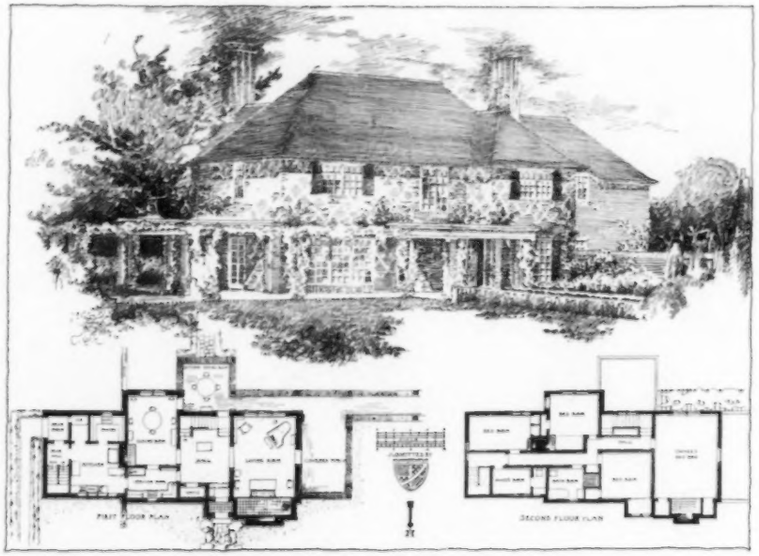
FIRST MENTION DESIGN. SUBMITTED BY E. DONALD ROBB, NEW YORK CITY.





THIRD MENTION DESIGN. SUBMITTED BY EUGENE WARD, NEW YORK CITY.

THE BRICKBUILDER COMPETITION FOR A BRICK HOUSE.



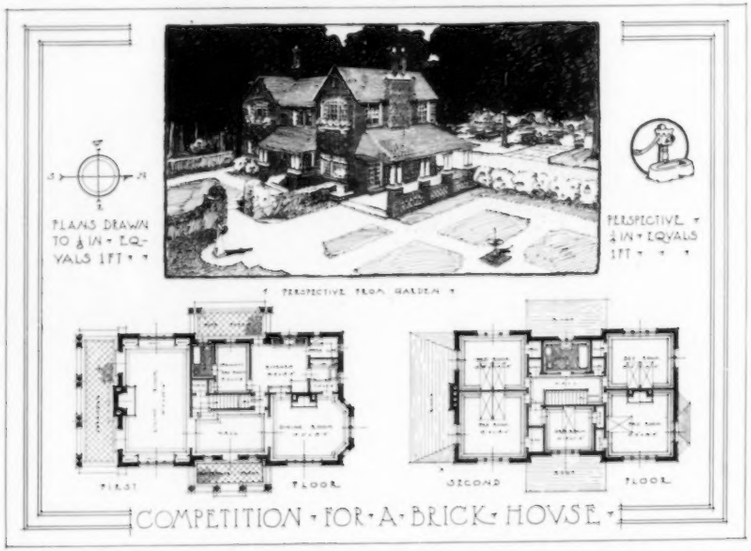
SECOND MENTION

DESIGN.

SUBMITTED BY

DERBY & ROBINSON,

BOSTON.


PLANS DRAWN TO ⅛ IN = EQUALS 1FT
PERSPECTIVE ⅛ IN = EQUALS 1FT
PERSPECTIVE FROM GARDEN
FIRST FLOOR
SECOND FLOOR
COMPETITION FOR A BRICK HOUSE

DETAIL OF WINGS FRONT ELEVATION SCALE ⅛ IN EQUALS 1FT
HALF INCH SCALE DETAILS
CHIMNEY DETAIL
ENTRANCE PORCH
COMPETITION FOR A BRICK HOUSE

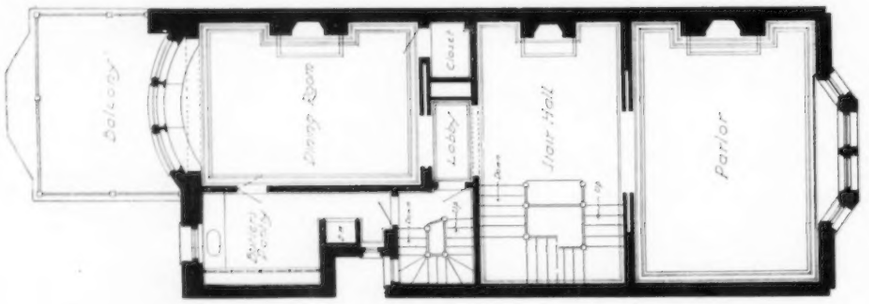
FIFTH MENTION DESIGN. SUBMITTED BY J. THEODORE HÄNEMANN, NEW YORK CITY.

THE BRICKBUILDER COMPETITION FOR A BRICK HOUSE.

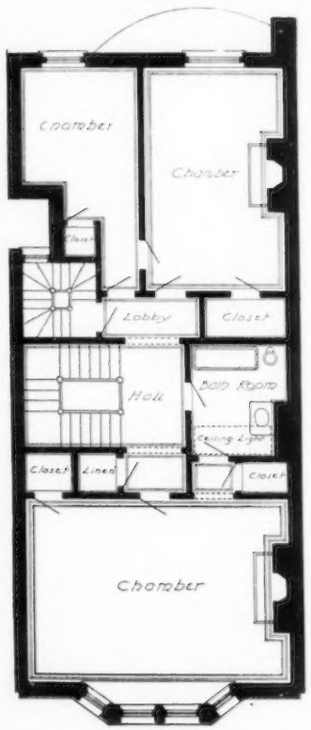
FOURTH MENTION DESIGN. SUBMITTED BY D. E. ROBB, MOUNT VERNON, N. Y.

SIXTH MENTION DESIGN. SUBMITTED BY EDGAR STANLEY, CLEVELAND, OHIO.

THE BRICKBUILDER COMPETITION FOR A BRICK HOUSE.

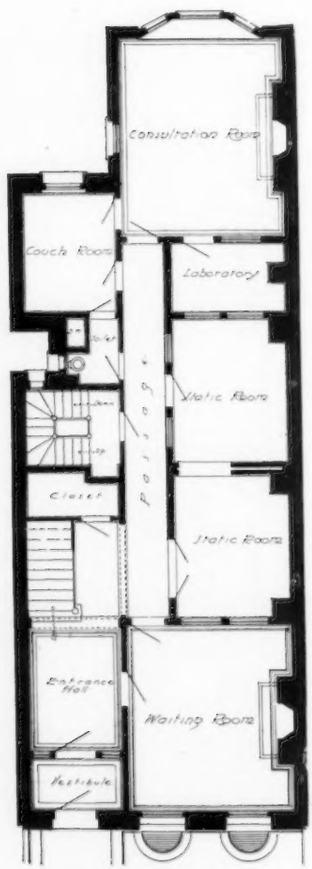


SECOND FLOOR PLAN.



THIRD FLOOR PLAN.

HOUSE AT WASHINGTON, D. C.
Marsh & Peter, Architects.



FIRST FLOOR PLAN.

UNIV OF MICH

Standard Architectural Books—VII.

ORDERS, ETC. —Continued.

WILLIAM R. WARE, LL.D.: Emeritus Professor of Architecture, Columbia University. The American Vignola: Part I. The Five Orders; Boston, The American Architect and Building News Company, 1902: Part II. Arches and Vaults, Roofs and Domes, Doors and Windows, Walls and Ceilings, Steps and Staircases; Scranton International Text-book Company, 1906: small fol. (.32 by .24 by .015); text, ill., pl.; 2 pts.; cloth, $4.00. Professor Ware's Vignola derives its chief value from a convenient method of drawing the orders and other details of the classic scheme.

CONSTRUCTION.

American School of Correspondence at Armour Institute of Technology, Chicago. Cyclopedia of Architecture, Carpentry and Building; a general reference work, etc., prepared by a staff of architects, builders, and experts of the highest professional standing, illustrated with over three thousand engravings. Chicago, American School of Correspondence; latest ed. 1908; 8° (.245 by .175 by .045); 10 vols, ill., pl.; cloth, $24.00. Contents: Vol. I., building superintendence, foundations, framing, city buildings, brickwork, contracts and specifications, studies in materials, the formal contract, government contracts, specifications, building law, review questions; vol. II., carpentry, laying out work, joints and splices, the wall, the floors, the roof, special framing, stair building, handrailing, estimating, typical estimate, review questions; vol. III., strength of materials, moment of inertia, statics, analysis of trusses, stress diagrams, masonry construction, building materials, foundations, masonry structures, retaining walls, construction of arches, review questions; vol. IV., reinforced concrete, cement, mixing concrete, finishing concrete, flexure in reinforced concrete, retaining walls, reinforced concrete columns, strength of T-beams, steamfitting, electric wiring, electric lighting, review questions; vol. V., steel construction, the steel frame, fireproofing, beams and girders, columns, trusses, framing details, foundations, mill building construction, riveted girders, elevators, review questions; vol. VI., mechanical drawing, lettering, geometrical drawing, orthographic projection, shade lines, intersection and development, isometric projection, architectural lettering, architectural drawing, rendering in wash, exhibition drawings, architectural design; vol. VII., freehand drawing, freehand perspective, perspective drawing, planes of projection, lines of measure, vanishing point, parallel perspective, shades and shadows, use of auxiliary planes, the Roman orders, intercolumnations, superposition of orders; vol. VIII., the classic Greek orders, Greek Ionic order, Greek Corinthian order, classic Roman order, early Roman Doric order, classic Roman Doric order, classic Roman Ionic order, classic Roman Corinthian order, glossary, bibliography, rendering in pen and ink, the steel square; vol. IX., tinsmithing, sheet metal work, practical workshop problems, tables for light gage work, coppersmith's problems, problems in heavy metal, skylight work, roofing, cornice work, miter cutting, problems in mensuration; vol. X., systems of warming, principles of ventilation, furnace heating, direct steam heating, indirect steam heating, direct hot water heating, indirect hot water heating, exhaust steam heating, vacuum systems, plumbing, review questions, index.

We have given the contents of each volume so that the reader may know the scope of the undertaking. The intention throughout is excellent, although, as in most works of this class, the quality is uneven. It is in the nature of an encyclopedia that it must pass through repeated revision to insure perfection.

Frank E. Kidder (1859-1905), C. E., Ph.D., F. A. I. A.: Consulting Architect and Structural Engineer. Building Construction and Superintendence: New York, William T. Comstock, 8° (.25 by .185 by .04); 3 parts, ill.; cloth, $3.00. Part I. Mason's Work, 260 ill., ninth ed., 1909; Part II. Carpenter's Work, 525 ill., seventh ed., 1908; Part III. Trussed Roofs and Roof Trusses, 306 ill., 1906. The late Mr. Kidder's building construction and superintendence covers the theory underlying all the practical operations of architecture as understood in the best American practice. In his active life Mr. Kidder met the many difficulties of his profession with their practical solution, and his published work is the permanent embodiment of his experience.

Frank E. Kidder. The Architect's and Builder's Pocket-book: A handbook for architects, structural engineers, builders, and draftsmen. New York, John Wiley & Sons, fourteenth ed.; 1905; 12mo (.175 by .105 by .06); 19+1,655 p., 1,000 ill., mostly from original designs; $5.00. It is not within the scope of Kidder's larger work to carry all the data of construction. This is done in the Pocket-book, which contains a fine general body of tables.

Ira O. Baker, C. E., Professor of Civil Engineering, University of Illinois. A Treatise on Masonry Construction. New York, John Wiley & Sons, ninth ed., 1903; 8° (.235 by .15 by .04); 13+556 p., ill., pl.; appendix, Specifications for Masonry, pp. 529-543; cloth, $5.00. Baker's Masonry Construction is especially competent in the discussion of the qualities of various materials. It deals with principles rather than with details, and its matter is arranged with much regard for order and proportion.

Charles F. Marsh, M. Inst. C. E., M. Am. Soc., C. E. Assoc., M. Inst., M.E., and William Dunn, F. R. I. B. A. Reinforced concrete. London, Archibald Constable & Co. Ltd., 1906; 4to (.285 by .2 by .05); 7+635+1 p., front, ill., tables partly folded, diagrams partly folded; cloth, 31s. 6d. net. Simple concrete in construction, as a technic of engineering, does not have place in this list; but reinforced concrete, which has become one of the most common and valuable methods of construction, should be represented by one treatise of the highest technical value. The work of Marsh and Dunn is the foundation of the best practice in this material. It gives complete discussion of the systems employed, of materials, the methods of practical construction, the data and calculations, and at the end a series of practical examples of works actually built.

Albert W. Buel, C. E., and Charles S. Hill. Reinforced Concrete; Part I. Methods of Calculation by A. W. Buel; Part II. Representative Structures, and Part III., Methods of Construction by C. S. Hill. New York, the Engineering News Publishing Company; 1906; 8° (.235 by .16 by .04); 12+499 p., ill., tables partly folded, diagrams partly folded; cloth, $5.00. This is a simpler work than that of Marsh and Dunn, but quite as authoritative. The work is done by practical working formulas, and examples of representative structures, rather than by theoretical discussion.

Theodore Minot Clarke, F.A.I.A. Building Superintendence. A manual for young architects, students, and others interested in building operations as carried on at the present day. New York, The Macmillan Company, new edition, revised and rewritten; 1903, 8° (.225 by .15 by .035); 6 + 306 p., ill.; cloth, $3.00. The purpose of this book is well given in its preface. It is a "simple exposition of the ordinary practice of building in this country, with suggestions for supervising such work efficiently." It meets the conditions of ordinary practice satisfactorily.

W. Frank Bower, Member of New Jersey Society of Architects. Specifications, a practical system for writing specifications for buildings. New York, William T. Comstock, second ed., 1898; small fol. (.3 by .25 by .015); 2 + 229 + 2 p.; cloth, $5.00. In a subject, which can hardly be brought to any finality, it may be questioned whether a book is the best form in which to present the material. Bower's work is probably as good a codification of general principles as is possible in a book.

Francis Ward Chandler, Professor of Architecture, Massachusetts Institute of Technology, Boston. Construction details prepared for the use of students of the Massachusetts Institute of Technology. Boston, The Heliotype Printing Company, 1892; fol. (.52 by .37 by .015); 1 p., 25 pl.; $10.00 in portfolio. This book gives in large scale plates all details of common building; framing, trim, bonds, etc., which are too often left to the mechanics employed. The measurements are given carefully, and the various materials presented in different colors.

Clarence A. Martin, Assistant Professor of Architecture Cornell University. Details of Building Construction. Boston, Bates & Guild Company, 1899; 4to (.32 by .25 by 915); 6 p., 32 pl.; cloth, $2.00. Professor Martin's book omits the subject of framing, but otherwise covers essentially the same field as Professor Chandler's work already noted. It is concerned simply with houses and minor public buildings. The plates are in line without color.

William Paul Gerhard: House-draining and Sanitary Plumbing. Twelfth ed., New York, D. Van Nostrand Company, 1907; 231 p., ill.; paper, 50 cents. Mr. Gerhard has published many thorough works on sanitary engineering, but perhaps no one of them is so immediately applicable to the needs of the housebuilder and householder as this compact treatise.

William R. Ware: Modern Perspective, a Treatise upon the Principles and Practice of Plane and Cylindrical Perspective. London and New York, The Macmillan Company, revised ed., 1900; text, 8° (.22 by .03); 8 + 321 p.; atlas fol. (.365 by .3 by .02); 27 pl.; $5.00 unbound. Professor Ware's book treats the subject in the broadest way with full appreciation of its underlying psychology. This makes the book a little complex certainly, but in the end much more satisfactory. The application of perspective to pictorial representation is especially useful.

Henry Kerr McGoodwin, Instructor in Architecture at the University of Pennsylvania. Architectural Shades and Shadows. Boston, Bates & Guild Company, 1904; small fol. (.32 by .25 by .015); 118 p., ill., diagrams; cloth, $3.00. After structural conditions are satisfied, architectural design is almost entirely a matter of the disposition of dark and light, the entire array of decorative conventions having been created simply to vary the luminosity of surface. Mr. McGoodwin frankly takes this point of view, and in the selection of problems and their discussion keeps carefully in mind the effect desired. The execution of his illustrations is beautiful.

Architectural Jurisprudence.

John Cassan Wait, M.C.E., LL.B., sometime Assistant Professor of Engineering in Harvard University. Engineering and Architectural Jurisprudence; a presentation of the law of construction for engineers, architects, contractors, builders, public officers, and attorneys at law. New York, John Wiley & Sons, First ed., 1898; 8° (.23 by .16 by .055); 80 + 905 p.; $6.00 calf. In the last analysis the architect as well as the engineer is a creator of property, and is in contact with the law of property in a complicated way. To meet the situation which arises in practice a special class is forming of practitioners, who understand both law and construction. A leader of these men is Mr. Wait, whose training and practice have been both in law and engineering. Of the books which he has published on his specialty we can mention but one, which is a complete presentation of the American law of building, supported by abundant references to other books, and the citation of all important cases.

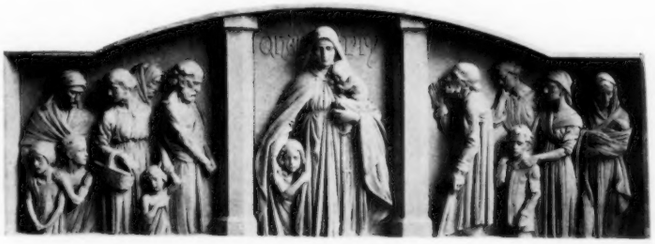
Theodore Minot Clarke, Architect, Owner, and Builder before the Law. A summary of American and English decisions on the principal questions relating to building, and the employment of architects, with about eight hundred references, including also practical suggestions in regard to the drawing of building contracts, and forms of contract suited to various circumstances. New York and London, The Macmillan Company, 1905; 8° (.23 by .17 by .035); 31 + 387 p.; cloth, $3.00. The large amount of legal practice connected in various ways with building in this country seems to call for a special reporting journal similar to the "Architects' Law Reports" in England. Until something of this sort appears, Clarke's book is a good substitute. In many difficulties which arise in practice it will give all the assistance required.

Frank Chouteau Brown: Letters and Lettering, a Treatise with two hundred examples. Boston, Bates & Guild Company, 1902; 8° (.22 by .15 by .025); 18 + 214 p., ill.; cloth, $2.00. The necessity existing in every architect's office for information about all sorts of lettering has produced this book, which has been done with great thoroughness.

Editorial Comment and Miscellany.

PLATE ILLUSTRATIONS — DESCRIPTION.

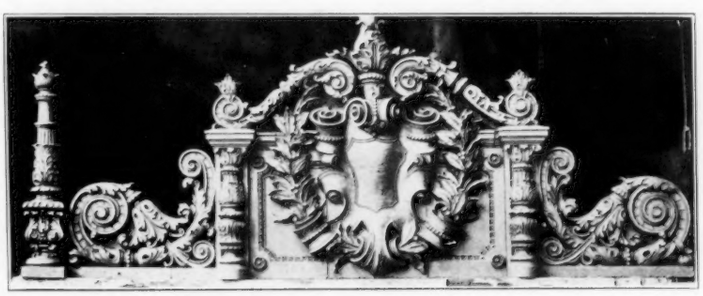
United States Military Academy, West Point, N. Y. — The situation of West Point on the Hudson River is extremely picturesque and furnishes an admirable location for a national institution of this sort. The monumental character of the buildings present us with an example of modern architecture unsurpassed in the harmonious distribution of the buildings as well as the dignity of style necessary for the proper training of military men. In planning for the needs of this academy, Cram, Goodhue & Ferguson have adhered to the Gothic style as consistently as possible without interfering with the practical requirements of the buildings. The tone of the red brick laid up in Flemish bond is in complete harmony with the ensemble and unites with the buff Indiana limestone trimmings in making an exceptionally artistic effect. Here also is one of those hillside propositions that required a vast amount of terracing similar to the great engineering feat already accomplished at Monte Carlo, France. This terracing has been well executed and extends from the broad artillery planes up to the top of this wild and rocky fastness. The floors of the buildings illustrated are mostly concrete, while the interior walls are of brick, with a wood finish of North Carolina pine. The cost of the buildings varies from 25 to 40 cents per cubic foot.



GROUP FOR A HOSPITAL.
Made by Conkling-Armstrong Terra Cotta Company.
John T. Comes, Architect.

DETAIL BY McKIM, MEAD & WHITE, ARCHITECTS.
Made by Atlantic Terra Cotta Company.

Library at Willoughby, Ohio. — No setting could be more suitable for a small English Gothic library than this site at Willoughby, which faces an old "College Square" with its ancient landmarks still standing on all sides. William Warren Sabin readily grasped the possibilities of such a location and has produced a library which is modern in every respect and at the same time harmonizes perfectly with the old buildings that surround it. The effectiveness of the architecture is enhanced by the result of the half-inch joints being recessed deeply between the rough fire flashed shale brick, which is laid up with a row of headers every third course. The trimmings are of imitation stone which blend in with the tone of the brick facing. The roofing consists of green glazed tiling. The window frames are wood, stained to match the color of the stone. Upon the interior the walls are of sand finished plaster, which material is used also for the ceiling panels formed by plaster beams, all of which are painted in oil. Dark stained oak is used for all the interior trimmings. The radiators for the steam heating system are concealed behind the bookcases. The cost of the building was $12,500.



DETAIL FOR A RESIDENCE.
Made by Atlantic Terra Cotta Company.
George Oakley Totten, Architect.

Fairmount College Library, Wichita, Kansas. — Albert Randolph Ross, appreciating the value of dignity in our college architecture, has placed at the end of a quadrangle which constitutes the main entrance to the college group an adaptation of Roman classical architecture of the Ionic order. The plan is admirably expressed in the exterior treatment, the colonnade across the front indicating the public space upon the interior. Once more we see the effectiveness of a wide joint with a mortar that harmonizes in color with the hard burned light colored buff brick. The buff Indiana limestone is used for trimmings and adds considerably to the complete repose and dignity of the whole structure. Upon the interior we have plaster and stucco walls which are tinted with quiet gray green cold water paint. The floors are of oak with the exception of the public rooms, which are of mosaic. The trimmings are oak stained to harmonize with the tinting of the walls. The entire cost of the building was $40,000, which included furniture, equipment, etc.

THE Philadelphia Chapter of the American Institute of Architects at its last regular meeting passed a resolution on the death of Charles Follen McKim, from which the following is quoted:

"The quality of his work combined

to an unusual degree scholarly correctness and profound artistic feeling, with the result that his work, reverently following classical models, was yet imbued with that individuality inseparable from the best architecture."

"His whole influence ran counter to that striving for novelty and ostentation, which in a new and rich country most imperils the right development of its architecture, and acted as a constant stimulus to restraint, refinement, and the study of classical models."

THE will of Charles F. McKim provides that a large share of his residuary estate be given either to the American Academy in Rome or to the president and fellows of Harvard University. By the following clause the terms of the gift are stated:

"If said endowment should be completed at the death of my daughter, or if then incomplete, the balance of the said trust I bequeath to the 'American Academy in Rome,' provided that at the death of said daughter the trustees of the Academy shall have in hand, cash, good securities, or in valid cash subscriptions, any portion of the said $1,000,000; but if for any reason the above legacy shall not vest in the Academy, I give and bequeath the balance of the trust to the president and fellows of Harvard University."

If the money goes to Harvard, it is understood that a scholarship will be established in the School of Architecture, the student obtaining it to make a special study of Italian, Sicilian, and Grecian architecture. It is the style of these countries with which we associate Mr. McKim's name; and it is fitting that his bequest, in addition to his numerous works, may serve to sustain an active interest in it.

GLENN BROWN has been elected a member of the Avery Library Commission as successor to the late Russell Sturgis. This commission, which is made up of the librarian of Columbia College, the professor of the architectural department of Columbia College, and an architect who is not immediately connected with the college, is empowered by the will of Henry O. Avery to purchase all books for the Avery Architectural Library. In the Avery collection there are between 18,000 and 19,000 volumes. In addition to this, the University Library possesses in its circulating department an indeterminate mass of artistic material which is probably equivalent to 10,000 volumes. Altogether, the University Library contains between 28,000 and 30,000 volumes on various subjects connected with the fine arts — a much larger number than is to be found in any other library in America.

DETAIL FOR SCHOOLHOUSE.
Made by Atlantic Terra Cotta Company.
John W. Donohue, Architect.

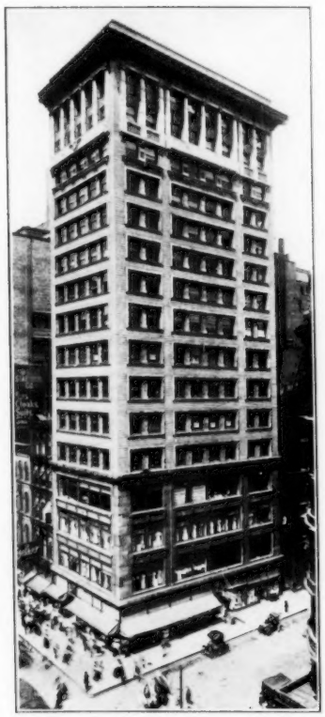
DETAIL BY GEO. F. PELHAM, ARCHITECT.
New York Architectural Terra Cotta Company, Makers.

DETAIL OVER ENTRANCE TO CHAMBER OF COMMERCE, BIRMINGHAM, ALA.
Executed in Faience by Hartford Faience Company.
Warren & Welton, Architects.

IT IS the understanding that not one of the great office buildings recently erected in New York has failed to return at least four per cent on the investment within two years from the time all the space was ready for tenants. This would seem to be confirmed by building plans for the future on the part of large interests, notably the Vanderbilts and the Pennsylvania Railroad, both of whom intend to improve the space they have available in the heart of New York.

MR. J. P. MORGAN'S effort to buy the famous Corte Reale at Mantua has been frustrated by the operation of the Italian law forbidding the sale of works of art. The building, formerly known as the Reggia is justly valued by the Italians as one of the most interesting royal residences in all Europe. It dates from 1302 and has played a conspicuous part in Italian history. Here the Gonzagas held court and Isabella d' Este lived. The palace has six hundred rooms. Miss Morgan, the financier's daughter, who is familiar with Italy and its history and art, urged her father to buy the palace; but his offer of $5,000,000 for it was made in vain.

WHILE guests on Sir Thomas Lipton's yacht several years ago, Marie Corelli, the novelist, proposed to Edward Morris of Chicago, that the house built in Stratford in the sixteenth century by



MENTOR BUILDING, CHICAGO.
Built of brick made by Ohio Mining & Manufacturing Company. Thomas Moulding Company, Chicago Agents.
Howard Shaw, Architect.

Alderman Thomas Rogers, the father-in-law of John Harvard, and in which Harvard lived, should be rescued and preserved. It was then for sale and likely to be demolished. Mr. Morris was quick to act and purchased the property. Sir Thomas and Miss Corelli were named as trustees, the latter supervising the restoration of the building to its original state. Mr. Morris has presented the house to Harvard University and the dedication exercises were held October 6th.

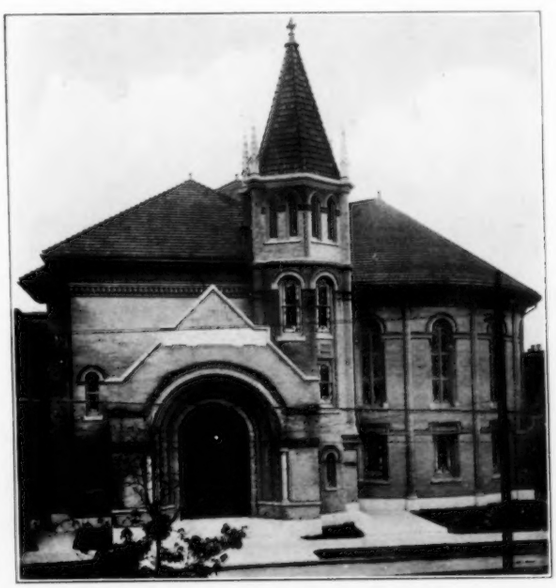
IN THE reconstruction of the Parker Building, New York City, which was burned last year, the architect has specified 12 inch hollow terra cotta blocks for the floor arches. They are to be laid so that they will cover the bottom surfaces of beams and girders, protecting the metal members by 2 inches of fireproof material. The columns will have as protection a 3 inch thickness of hard burned terra cotta, joined together by Portland cement mortar. This covering will insulate the material from the fiercest heat capable of being generated in the building. The elevator shafts and stairways are to be enclosed in such a manner that, if a fire starts, it will not be able to spread from one floor to another, but will be confined to the level of its origin. In every detail the architect has planned to make the new structure absolutely fireproof.

MEASUREMENTS of the Greek Theater at Taormina, Italy, the auditorium referred to in ancient history and famous the world over because of its perfect acoustic properties, have been made by J. E. O. Pridmore, architect, Chicago. As the ruins are reported to have been completely demolished by the earthquake of December 28th, Mr. Pridmore probably has the only measurements in existence. He believes he will find the key to the wonderful acoustic properties of the theater and is confident that when he has made his diagrams he will discover a secret of construction that will be invaluable in the future building of American auditoriums.

McCORMICK BUILDING, CHICAGO.
Built of brick made by Columbus Brick & Terra Cotta Company.
Holabird & Roche, Architects.

TAPESTRY BRICKWORK.

THIS is the title of a new booklet which has just been published by Fiske & Co., New York and Boston. Needless to say, it is devoted in part to the possibilities which may be obtained structurally and esthetically by the use of "Tapestry Brick," of which they are the sole manufacturers. A goodly portion of the work, however, is given over to a presentation of some of the most charming brickwork which is to be found in the world—and brick as a building material is discussed by Claude Bragdon in his own inimitable way. The work is further embellished by eight colored plates, which, if not mechanically perfect, are as nearly so as the present standard of color work permits.



METHODIST CHURCH, NEW ORLEANS.
Built of Hydraulic-Press Brick.
Diboll & Owen, Architects.

CONVENTIONS OF THE AMERICAN INSTITUTE OF ARCHITECTS AND THE ARCHITECTURAL LEAGUE OF AMERICA.

THE annual convention of the Architectural League of America will be

DETAIL BY SCHWARTZ & GROSS, ARCHITECTS.
Made by New Jersey Terra Cotta Company.

held in Washington, December 11th, 13th, and 14th. The convention of the American Institute of Architects will be held in Washington, December 14th, 15th, and 16th. The object in holding the two conventions at approximately the same time is that certain educational matters of importance to the profession may be given full consideration, and that some definite steps may be taken to bring about a more uniform and harmonious course of action on the part of the two bodies.

IN GENERAL.

At the annual meeting held Oct. 11, 1909, the following officers were elected by the Philadelphia Chapter, A. I. A.: President, William D. Hewitt; first vice-president, John Hall Rankin; second vice-president, Milton B. Medary; treasurer, C. L. Borie, Jr.; secretary, Arnold H. Moses; librarian, J. P. B. Sinkler.

Marcus R. Burrowes, architect, has opened offices in the Trussed Concrete Building, Detroit, Michigan. Manufacturers' catalogues and samples desired.

George W. Hellmuth and Louis C. Spiering, architects, St. Louis, announce the dissolution of the firm of Hellmuth & Spiering. Mr. Hellmuth has taken offices in the Chemical Building, while Mr. Spiering has located in the Liggett Building.

The firm of Whitfield & King, architects, New York City, has been dissolved. Henry D. Whitfield has taken offices at 160 Fifth Avenue. Gurdon S. Parker will be associated with Mr. Whitfield. Beverly S. King announces his association with Harry Leslie Walker, under the firm name of King & Walker, with offices in the Terminal Building, New York City, and the Studio Building, Atlanta, Ga.

Arnold & Punchard, Boston, were the landscape architects for the garden for H. S. Shaw, Esq., Milton, Mass., illustrated on Plate 107 of THE BRICKBUILDER for September.

Warren & Welton of Birmingham, Ala., were associated with Carpenter & Blair as architects for the Empire Building of Atlanta, which was illustrated in THE BRICKBUILDER for September.

What is probably the finest appointed country house in the middle west, or anywhere beyond the New York district, is the palace at Lake Forest into which J. Ogden Armour is about to move. About four rooms out of the one hundred or more have been fitted up under haste orders to make the owner comfortable.

DETAIL BY HENRY LOOMIS CURTIS, ARCHITECT.
Executed in polychrome terra cotta by O. W. Ketcham Terra Cotta Company.

DETAIL BY SOUTH AMBOY TERRA COTTA COMPANY.

The new $1,500,000 administration building of the Chicago Board of Education, and which Architect Dwight Perkins is designing, is to have eighteen stories instead of fourteen and is to be located on the lake front at the north end of Grant Park, if the consent of the municipal authorities can be obtained.

The New Jersey Terra Cotta Company of New York will supply the architectural terra cotta for the following buildings: Tilden Building, New York City, D'Oench & Yost, architects; Department Store, Charlotte, N. C., Wheeler & Stern, architects; High School, Lynn, Mass., Penn Varney, architect; New Residence on Riverside Drive, New York City, Schwartz & Gross, architects.

The Harris Trust and Savings Bank will shortly have a permanent home on Monroe street, Chicago. The nineteen floors above the bank in the new building to be erected will contain offices, and the structure will represent an investment of $2,500,000.

DETAIL FOR HOTEL.
Made by Northwestern Terra Cotta Company.
Toledano & Wogan, Architects.

At the suggestion of Mr. James Rush Marshall, architect, the engineering department of the City of Washington has acquired a new English publication entitled "Town Planning," which Mr. Marshall says is "the first of its kind of any consequence in the English language."

The new plant of the Bradford Pressed Brick Company, at Bradford, Pa., which produces a wire cut impervious red brick, has a

APARTMENT BUILDING, CHICAGO.
Faced with wire cut dark red brick, made by Western Brick Company. H. R. Wilson, Architect.

daily capacity of 70,000. 2,000,000 of these brick were shipped on order during the month of September.

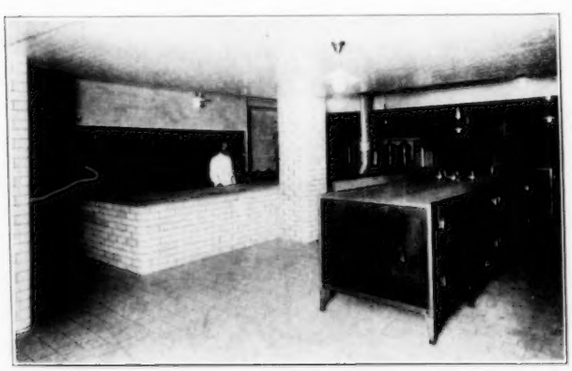
Sayre & Fisher Company supplied most of the brick used in the West Point Buildings which are illustrated in this number of THE BRICKBUILDER.

The exterior brick used in many of the houses for the Girard Estate were furnished by Fiske & Co. Inc. Illustrations of these buildings are to be found in this issue of THE BRICKBUILDER.

DETAIL BY LONG & LONG, ARCHITECTS.
Made by American Terra Cotta & Ceramic Company.

NEW BOOK

Structural Details or Elements of Design in Heavy Framing. By Henry S. Jacoby, Professor of Bridge Engineering in Cornell University. 8vo, ix + 368 pages, profusely illustrated with figures in the text, 6 folding plates, and 34 full page illustrations. Cloth, $2.25 net. New York, John Wiley & Sons.



CULINARY DEPARTMENT, WARM STORAGE ROOM, PLAZA HOTEL, NEW YORK CITY.
Finished in enamel brick, made by American Enameled Brick and Tile Company.

WANTED AT ONCE—A mature, up-to-date, first class, practical draftsman, fully qualified to take entire charge of office doing a modern practice in the Northwest. Must possess tact, push, and business capacity, and be familiar with office system, correspondence, plumbing, heating, wiring, etc., on large work—office buildings, public work, etc. Man with New York experience in large, systematized offices preferred. Address, giving experience, business qualifications, and state whether married or single. SSS-BRICKBUILDER.

WANTED—Architectural draftsman with one or two years' practical experience. Young technical graduate preferred. Position permanent for right party. Address "Pittsburg," care The Brickbuilder.

ARCHITECTS AND DRAFTSMEN—I REGISTER ASSISTANTS FOR THE ARCHITECTURAL PROFESSION EXCLUSIVELY IN AND FOR ANY PART OF THE UNITED STATES. HAVE CALLS FOR HELP CONTINUALLY FROM THE BEST OF OFFICES IN ALL PARTS OF THE COUNTRY. MY LIST CONSISTS OF THE HIGHEST GRADE TECHNICAL MEN. NO REGISTRATION FEE AND REASONABLE TERMS. IF YOU ARE NEEDING HELP OR SEEKING A GOOD POSITION, WRITE ME. LEO A. PEREIRA, 6 E. MADISON ST., CHICAGO.

LINOLEUM
SECURED BY CEMENT TO EITHER WOODEN OR CEMENT FLOORS

Ideal Floor Coverings for Public Buildings. Elastic, Noiseless, and practically indestructible. It is in use on Battleships, cemented to steel decks in the United States, English and German Navies; should be placed on floors under pressure, and best results can only be obtained by employing skilled workmen.

The quality of our work has passed the inspection of the United States Government and numerous Architects and Builders.

The Franklin Union Building in Boston, R. Clipston Sturgis, Architect, is a sample of our work, and we have contracts for the North Dakota, the largest Battleship in the United States Navy; the extensions of the Suffolk County Court House in Boston, George A. Clough, Architect; and the Registry of Deeds, Salem, Mass., C. H. Blackall, Architect.

We solicit inquiries and correspondence.

JOHN H. PRAY & SONS COMPANY
646-658 WASHINGTON STREET, Opp. Boylston Street
BOSTON : : : : : : : : : : MASS.

60 WATER COLOURS $2.00

"The Cathedral Cities of Spain," a portfolio containing 60 reproductions from original water colours by W. W. Collins, R. I.

This portfolio is of interest to all architects, draftsmen, and artists, "dabbling" in water colours.

The above portfolio is an addition to the series listed below:

"English Cathedrals," 60 plates	$2.00
"French Cathedrals," 60 plates	2.00
"Versailles and the Trianons," 56 plates	2.00
"Cairo, Jerusalem, and Damascus," 58 plates	2.00

The five portfolios will be sent, express paid, on receipt of $9.00

J. H. JANSEN SUCCESSOR TO M. A. VINSON
302 Caxton Bldg. - - - Cleveland, Ohio

WANTED—"BRICKBUILDER" AUGUST, 1898, AND APRIL, 1899

COMPETITION FOR A PUBLIC BATH AND GYMNASIUM BUILDING.

FIRST PRIZE, $500. SECOND PRIZE, $200. THIRD PRIZE, $100.

COMPETITION CLOSES JANUARY 17, 1910.

PROGRAM.

THE problem is a Public Bath and Gymnasium Building. The location may be assumed in any American city of about 50,000 inhabitants, or some section in a larger city. Competitors may choose between two sites, one at the corner of two intersecting streets, or one in the middle of a block. Both lots are ample in size to accommodate the building and are practically level.

In plan the building may be rectangular (block); or of the pavilion type, having a central motive and two wings, with the longitudinal axis parallel to the street.

The plan should provide for the following: —

IF OF THE BLOCK TYPE: —

In the basement: a swimming pool, six showers, a suitable number of lockers, dressing rooms and benches, toilet rooms, supply rooms, a small laundry for washing and drying, heating plant, and coal storage.

On the first floor: general waiting room, administration offices, at least fifty showers (forty with individual dressing rooms, and ten arranged in groups), lockers, dressing benches, toilet rooms, etc.

On the second floor, which may extend approximately two stories: a gymnasium, six showers, four sponge baths, a rubbing table, lockers, dressing rooms, benches, instructors' and medical attendants' rooms.

IF OF THE PAVILION TYPE: —

In the central part of the building: first floor to provide for a reception room and administrative offices. Second floor to provide a hall for lectures and other entertainments.

In one wing: a gymnasium with the same accommodations as recommended for the block type.

In the other wing: a swimming pool, the shower baths, and other features suggested for the block type.

GENERAL: —

In connection with the gymnasium a running track should be provided which will have not more than twenty-four laps to the mile. Other gymnasium apparatus need not be indicated.

Competitors are free to add any additional features to the plan and equipment which may seem desirable.

The exterior of the building is to be designed entirely in architectural terra cotta, employing color treatment in at least portions of the walls. It is suggested that large blank surfaces of gymnasium walls afford an excellent opportunity for design in terra cotta.

The following points will be considered in judging the designs: —

A. Rational and artistic treatment of the exterior.
B. Frank and logical expression of the prescribed material.
C. Excellence of plan.

It must be borne in mind that one of the chief objects of this competition is to encourage the study of the use of architectural terra cotta. There is no limitation of cost, but the designs must be suitable for the character of the building and for the material in which it is to be executed.

In awarding the prizes the intelligence shown in the constructive use of architectural terra cotta and the development or modification of style, by reason of the material, will be taken largely into consideration.

DRAWINGS REQUIRED.

On one sheet, at the top, the front elevation drawn at a scale of 8 feet to the inch. On the same sheet, below the front elevation, the floor plans drawn at a scale of 16 feet to the inch.

On a second sheet, at the top, the elevation of secondary importance drawn at a scale of 16 feet to the inch; immediately below half inch scale details of the most interesting features of the design. The details should indicate in a general manner the jointing of the terra cotta and the sizes of the blocks. The color scheme is to be indicated either by a key or a series of notes printed on the same sheet with the secondary elevation and details, at a size which will permit of two thirds reduction.

The size of each sheet (there are to be but two) shall be exactly 36 inches by 24 inches. Strong border lines are to be drawn on both sheets, one inch from edges, giving a space inside the border lines 34 inches by 22 inches. The sheets are not to be mounted.

All drawings are to be in black ink, without wash or color, except that the walls on the plans and in the sections may be blacked-in or cross-hatched.

Graphic scales to be on all drawings.

Every set of drawings is to be signed by a *nom de plume*, or device, and accompanying same is to be a sealed envelope with the *nom de plume* on the exterior and containing the true name and address of the contestant.

The drawings are to be delivered flat at the office of THE BRICKBUILDER, 85 Water Street, Boston, Mass., charges prepaid, on or before January 17, 1910.

Drawings submitted in this competition must be at owner's risk from the time they are sent until returned, although reasonable care will be exercised in their handling and keeping.

The prize drawings are to become the property of THE BRICKBUILDER, and the right is reserved to publish or exhibit any or all of the others. Those who wish their drawings returned may have them by enclosing in the sealed envelopes containing their names, ten cents in stamps, if on cardboard twenty-five cents in stamps.

The designs will be judged by three or five well-known members of the architectural profession.

For the design placed first in this competition there will be given a prize of $500.

For the design placed second a prize of $200.

For the design placed third a prize of $100.

There have been published in THE BRICKBUILDER from time to time articles treating of the Public Bath and the Gymnasium, also illustrations of both types of buildings. This data, which may be of assistance to those who intend to enter this competition, will be found in the following issues: —

1909. February, March, April, May, June.
1908. February, March, April, May, June, August, November.

We are enabled to offer prizes of the above-mentioned amounts largely through the liberality of the terra cotta manufacturers who are represented in the advertising columns of THE BRICKBUILDER.

This competition is open to everyone.